

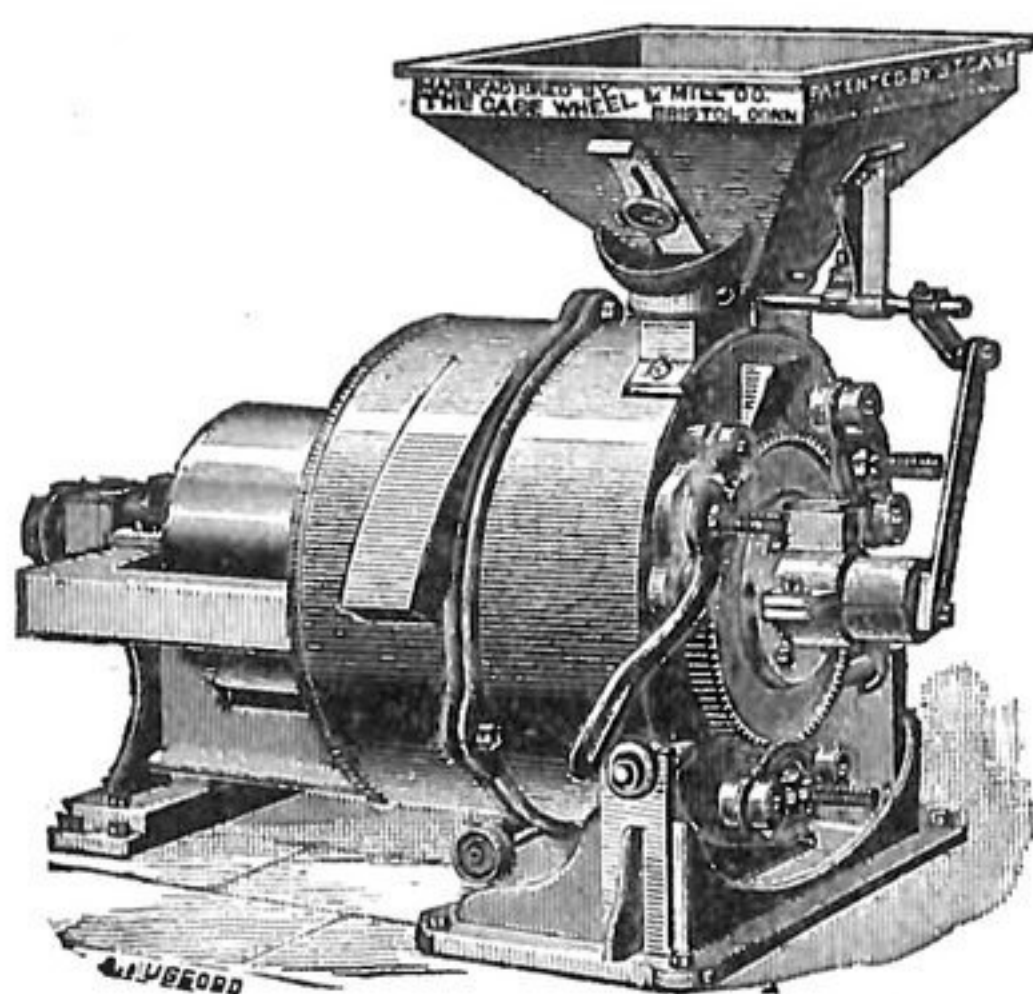
CHRONICLE OF THE GRAIN AND FLOUR TRADE

PUBLISHED EVERY MONDAY MORNING.

VOL. XX. No. 19.

BUFFALO, N. Y., JULY 8, 1889.

\$1.50 PER YEAR.



VICTORY OVER ALL OTHERS. SINGLE & DOUBLE VERTICAL GRINDING MILLS.

(J. T. CASE'S PATENT.)

FACTS ARE MIGHTIER THAN ASSERTIONS. READ WHAT THEY SAY:

"Our 20-inch mill made by the Case Wheel & Mill Co. is in every respect satisfactory, easy to handle, and best results obtained of any mill in the country, with same quantity coal and power."—A. S. RUSSELL & Co., Meriden, Conn.

"Superior to any mill in use."—Geo. Weston, Bristol, Conn.

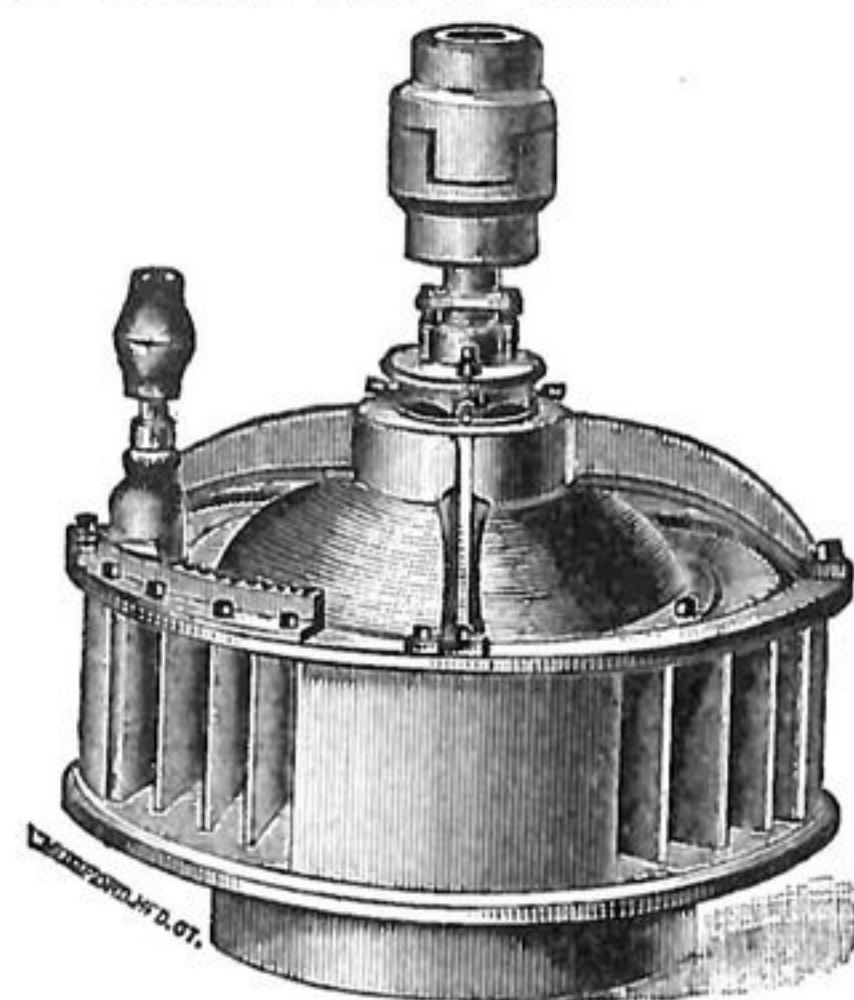
"The best satisfaction in quantity and quality."—CHILD'S ELEVATOR, Manchester, Ct.

"We take pleasure in recommending it."—GARLAND, LINCOLN & Co., Worcester, Mass.

SEND FOR CATALOGUE—ILLUSTRATED AND DESCRIPTIVE.

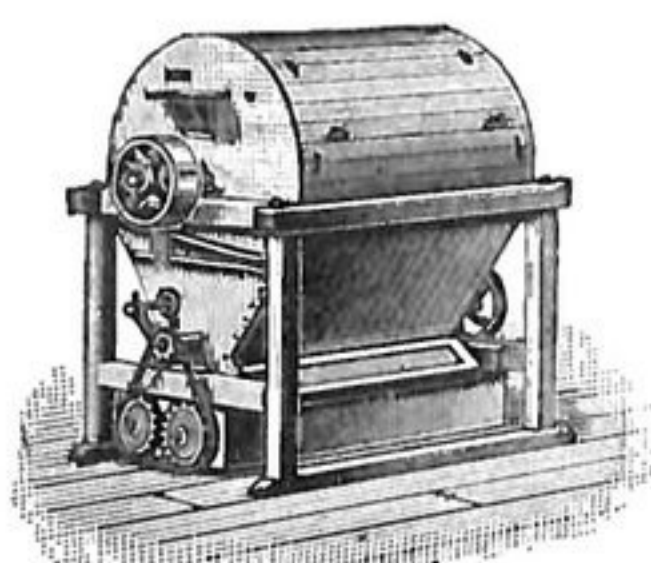
The Improved National Turbine Water Wheel

The Best for Economy; The Best for Durability; The Best for Power. ONE THOUSAND FIVE HUNDRED NATIONAL WATER WHEELS IN USE Prove that our Assertions are Supported by the Leading Manufacturers in the Country. Send for illustrated catalogue and prices to the manufacturers.

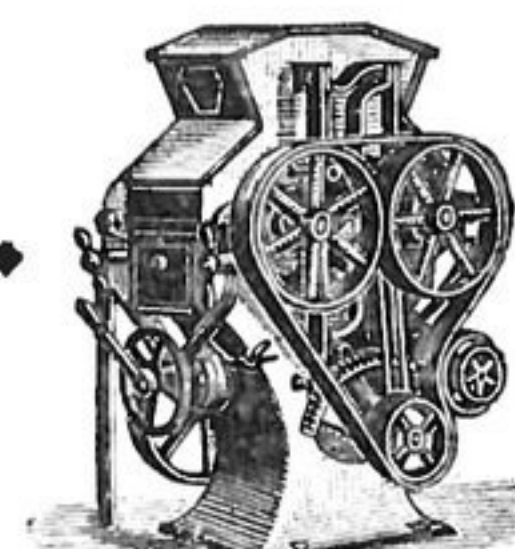


The Case Wheel & Mill Co., Bristol, Conn.

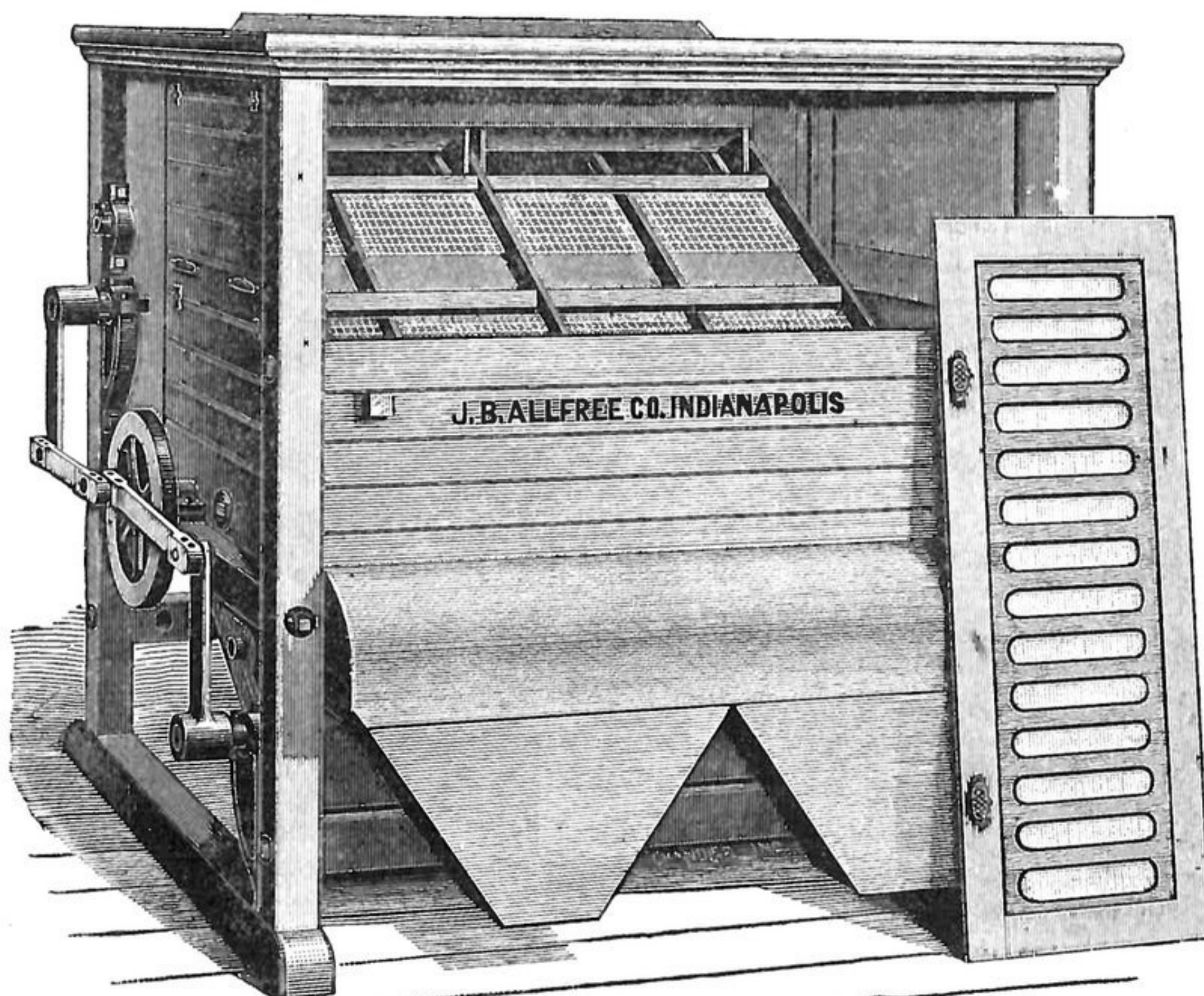
THE ONLY NOISELESS SIEVE SCALPER.



Bran Duster.



Wheat Roller Mill.



The J. B. Allfree Sieve Scalper.

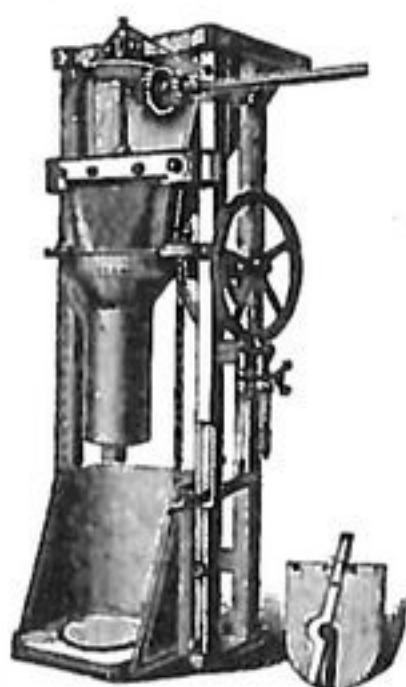
—ADDRESS FOR PRICES, ETC.—

The J. B. Allfree Co., Indianapolis, Ind.

103 AND 105 SOUTH PENNSYLVANIA STREET.

Mill Builders and General Mill Furnishers.

DUFOR BOLTING CLOTH A SPECIALTY.



Flour Packer.



Corn Mill.

Immense Capacity.
Power
Required
Merely
Nominal.
It will Take Care of
3 or 4 Breaks in a
100-Barrel Mill.

Buy our Scalpers and
thus avoid the terri-
ble racket made by
other machines; ours
is Noiseless.

It will Take Care of
1 Break in a 500-
Barrel Mill.

FIRE! FIRE!! FIRE!!!

Our entire works were destroyed by fire on the night of May 10th. Scarcely two hours after the workmen had left their day's work a fierce fire started which in less than two hours left our entire plant as complete a wreck as was ever witnessed. But like the

FABLED PHOENIX OF MYTHOLOGY

We have risen from our own ashes, and have erected a temporary machine shop above the ruins, and have it already furnished with power and new machinery for Re-Grinding and Re-Corrugating Rolls, together with Lathes and other machinery for doing general machine work. We have leased some Large Railroad Shops and an Extensive Wood-Working Factory so that we are now building Case Roller Mills, Purifiers, Inter-Elevator Flour Dressers and all our other machinery nearly as fast as ever.

OUR PATTERNS WERE SAVED

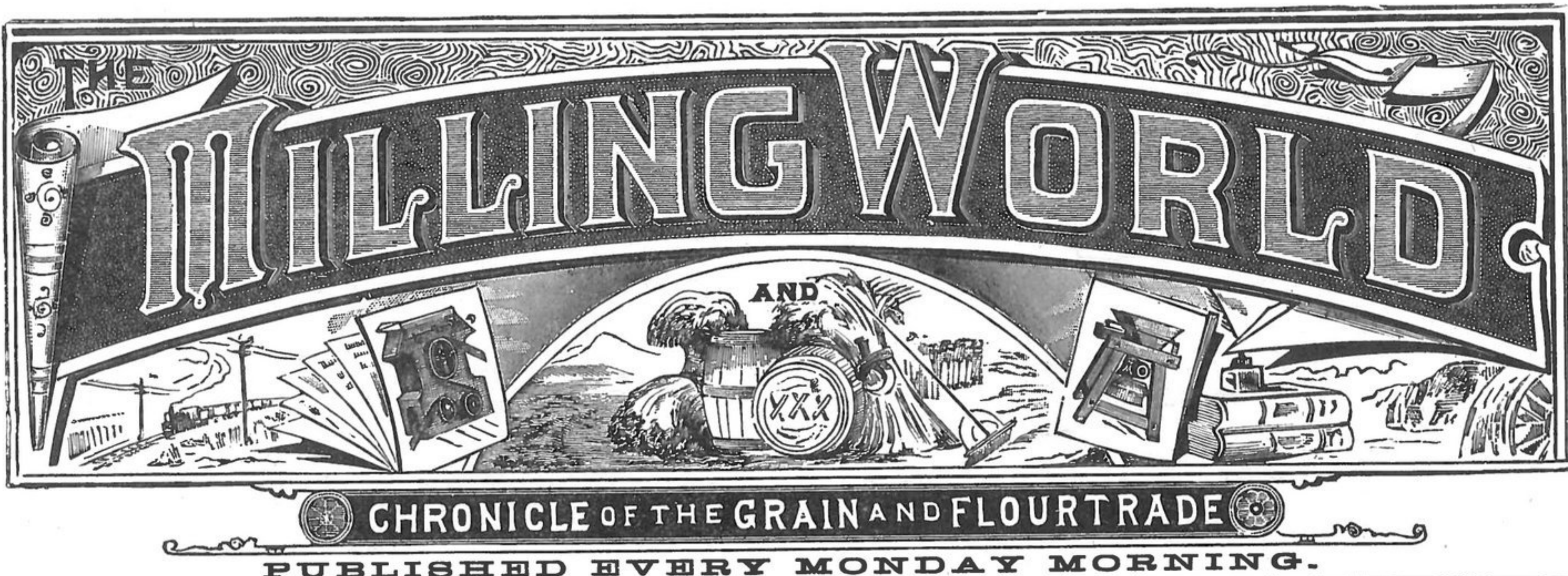
Also all our Plans, Flow Sheets, and the Records of our Business.

NEW AND EXTENSIVE WORKS

Will be erected at once on a large building site just purchased, and we intend to make our shops when completed the most convenient and best equipped plant in the country. We expect soon to get caught up with our orders, and will be in shape to contract for new work at an early date. We hereby tender our sincere thanks to our many friends for their letters of sympathy and good will, and also to those who have been patiently waiting for their machines until we could get in shape to make them. We assure all our friends that we shall still be in the field with Case machinery, and will be glad to answer all inquiries the same as ever, for we are still doing business at the old stand.

THE CASE MFG. CO., COLUMBUS, O.

PLEASE MENTION "THE MILLING WORLD."



VOL. XX. No. 19.

BUFFALO, N. Y., JULY 8, 1889.

\$1.50 PER YEAR.

SO FAR as may be judged from the conflicting reports, the present prospect indicates a crop of winter wheat above the average in both quantity and quality, while the spring wheat is not likely to exceed an average in quantity, although the quality bids fair to be high. There will be no lack of grain in the United States. The home demand will be fully supplied, and there will be enough surplus to answer all the probable foreign demand.

EX-PRESIDENT J. H. Seybt, of the Millers' National Association, who did not attend the Milwaukee meeting, is generally supposed to have remained away from that meeting because he did not approve of the so-called "settlement" of the Buffalo Bogus Resolution decided upon in advance by the executive committee. It may be possible that he had other reasons for remaining away, but that one reason is sufficient to justify his absence, and he deserves commendation for refusing to sanction so ridiculous an action as that "Official Buffalo Bogus Resolution Business."

FRENCH political economists profess to believe that the duty of 5 francs, imposed last year on each quintal of imported wheat, has been beneficial to French agricultural interests. They point out that the duty prevented the in-pouring of a flood of Russian and American wheat, to supply the French shortage and to cheapen ruinously the short stock of the French producers, that it kept up prices in the French markets to a profitable notch, that it added 56,000,000 francs to the income of the country on the 11,350,000 quintals imported, and that it did not materially increase the price of bread to the consumer. There is a tendency to call for still higher protection in France.

GRAIN-GROWERS and farmers the world over will remember the season of 1889 as a season of unusual conditions. Everywhere the rains have been unequally distributed, withheld at the beginning until drouth had seriously injured grain and vegetables, and then scattered in floods until the drouth-damage was intensified by flood-damage. Disastrous frosts and floods, destructive insect pests, unusual rains in harvest, winds, cyclones, hailstorms and a hundred other disagreeable things have combined to make the lot of the agriculturist not a happy one this year. No country in the Northern Hemisphere has escaped the inflictions. In addition to all these inevitable natural conditions we must reckon the evil work of the over-active speculators.

MAY saw the addition of 74,248 immigrants to the population of the United States, against 98,435 in May, 1888. For the eleven months ending May 31, 1889, the immigrants into the United States numbered 392,555, against 471,340 for the same months in the preceding year. The falling off of 78,785 in eleven months is not altogether a deplorable thing, judged from the American point of view. The immigration of 392,555 in eleven months is quite large enough for all practical purposes. Of that total Austria-Hungary sent us 30,045, Denmark 7,987, France 5,509, Germany 90,735, Great Britain 138,705, Italy 21,672, Russia 29,102, Sweden and Norway 42,396, and Switzerland 6,505. Most of the incomers

are desirable citizens, and the less desirable will become more desirable after they have passed some time in learning the ways of the Americans.

MILLERS are queer folk. A miller prefers always a "journal" that is never "red." He delights in "offal tails" that abound in "scalping" incidents. He dotes on "reels" that never dance and are never danced. He may never kick, but he is always ready to "bolt." He never de-"sieves" a customer concerning the amount of grain he re-"sieves" from him, and yet he ex-"tolls" so much grain that he has never "bin" known to want — more than he can get. He ornaments his elevators with "heads" and "boots." He gives his buhr an "eye" and "dresses" it anew frequently. He "feeds" his grain to rolls. He dotes on "flours," but is seldom a florist. He hates to be charged with murder, no matter how much stock he "kills." He is equally queer in various other particulars.

IT is a suggestive fact that the "crop conditions" reported in Europe control largely those reported in the United States, and vice versa. When every thing is swimming and booming in this country, every thing in Europe is at the lowest ebb and the crop outlook is desperate. When, the next day or the next week, Europe reports magnificent prospects for the wheat crop, the conditions in the United States promptly become desperate. The American bull is always opposed to the European bear, and the European bull is always opposed to the American bear. The see-saw goes on incessantly through the growing months, and the one who observes and reads all the reports becomes absolutely unable to hold an intelligent idea on the probabilities or possibilities of the crop. The speculators have reduced the work of befogging the public mind on crop matters to a sublime exact science.

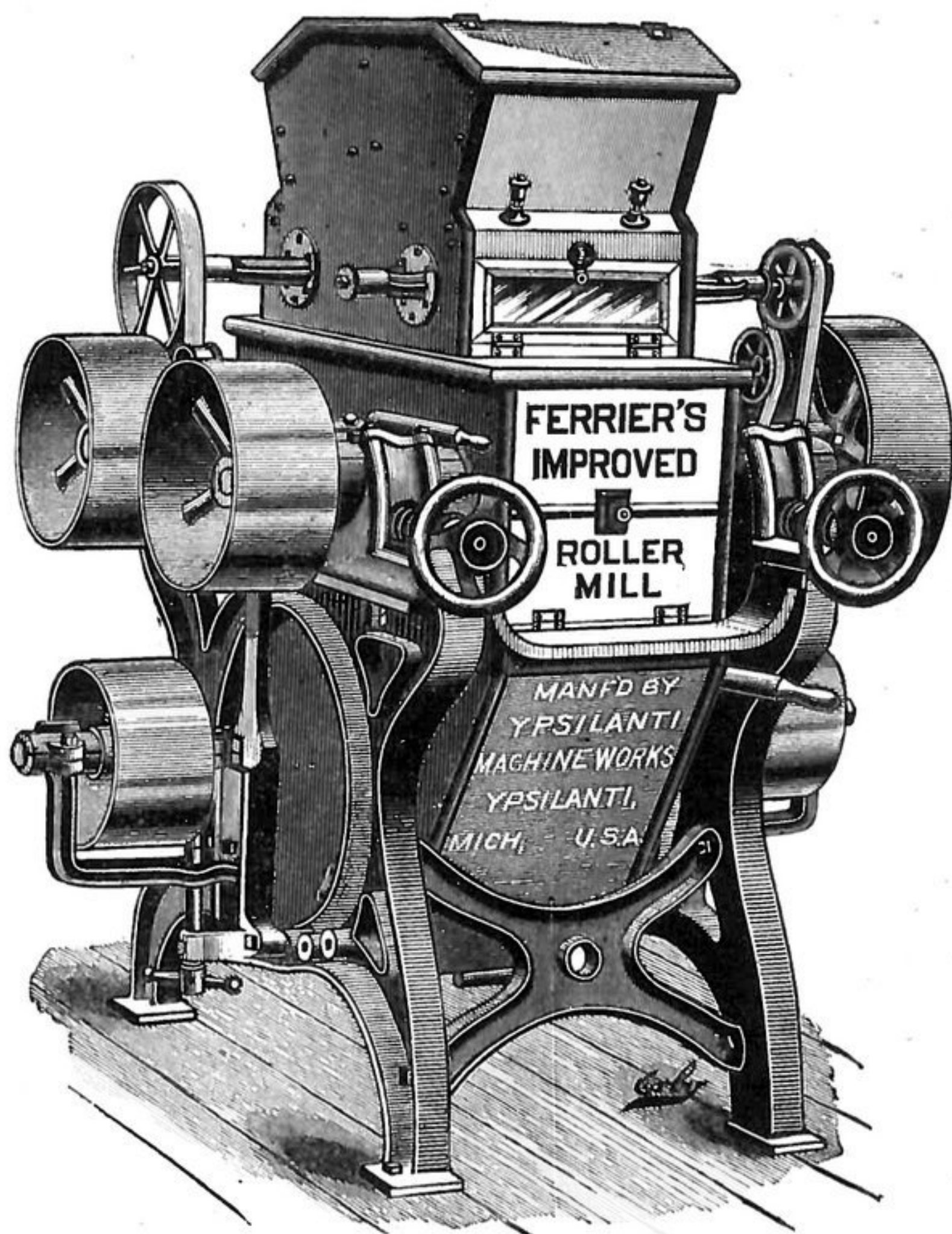
HAVE wheat-farmers in all ages been practicing erroneous methods of culture? Is it the proper plan to sow wheat thickly? Professor Blount, of the Agricultural College of Colorado, has recently made a series of most interesting and important experiments on the habits, needs and capacities of the wheat-plant, and his achievements seem to indicate that the present method of crowding the plant closely is wrong. He reports that he planted on an exact acre $7\frac{1}{2}$ pounds of hand-picked wheat, disposing the seed in rows 18 inches apart, and that acre produced 67 bushels of fine wheat. On a quarter acre he planted 32 ounces of selected seed, in the same way, and the yield was 18 bushels. On 76 square feet of ground he planted 76 kernels of extra-fine seed, which weighed 45 grains, and the yield was $10\frac{1}{4}$ pounds, equivalent to nearly 100 bushels to the acre. These results are remarkable. They show the value of good seed, to start with, and the value of a plenty of soil to feed each stalk, to end with. While the world is waiting for some wonderful machine to create a revolution in milling, the time might be occupied profitably in inducing farmers to experiment on methods of increasing their average yield of wheat. If Professor Blount's experiments are to be relied upon, the wheat-growers of the world should call a halt and prepare for a new departure.

YPSILANTI MACHINE WORKS, YPSILANTI, MICH.

MILL BUILDERS

And Manufacturers of

FLOUR MILL MACHINERY



Sizes of Ferrier's Improved Four-Roller Mills.

6x12	6x15	6x20
9x15	9x18	9x24

YPSILANTI MACHINE WORKS, YPSILANTI, MICH.

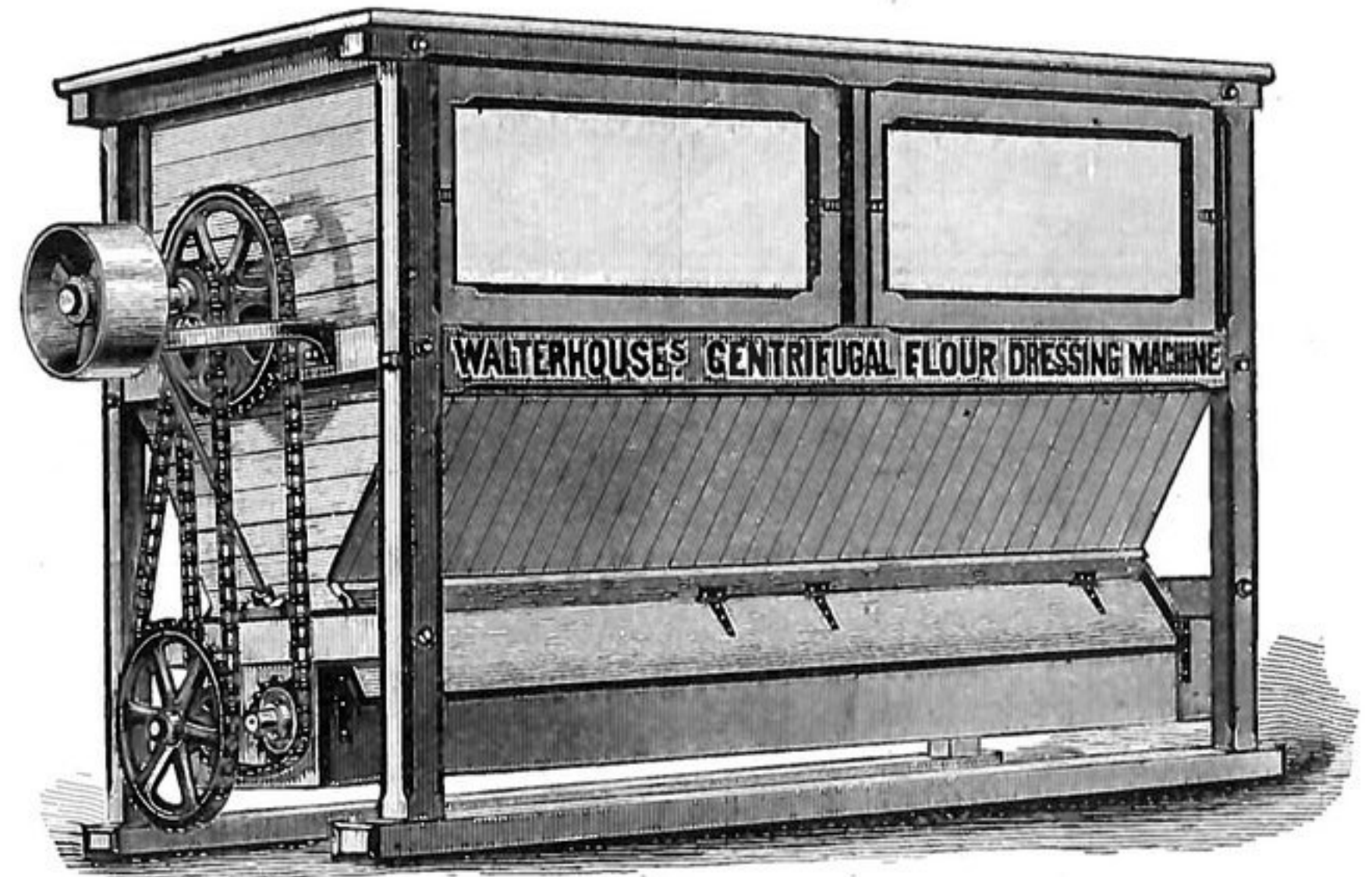
Gentlemen: We have had a line of your "Roller Mills" in use for over two years, and they have given entire satisfaction in every respect. They work like a charm, and their ease of adjustment and solid structure, together with the excellent finish you give them, can but recommend your machines to the milling public.

Yours respectfully,

A. R. DICKINSON & CO.

NASHVILLE, TENN., MAY 3, 1889.

Dealers in Bolting Cloth. Walterhouse's Centrifugal; Walterhouse's Slow-Running Flour Dresser with Inside Cylinder; Plain Round Reels; Scalpers; Bolting Screens, Etc., Etc., Etc.



JOHN ORFF, PROPRIETOR OF
EMPIRE FLOURING MILLS,
FORT WAYNE, IND., APRIL 10, 1889.

YPSILANTI MACHINE WORKS, YPSILANTI, MICH.

Gentlemen: The Centrifugal Reel bought from you some time ago is doing its work complete in every respect. It does a large amount of work, and does it well. Should we make further changes in bolting, shall use more of them. Wishing you success, we remain,

Respectfully, JOHN ORFF.

OFFICE OF LEXINGTON MILL CO.,
LEXINGTON, MICH., JAN. 23, 1889.

TO YPSILANTI MACHINE WORKS.

Gents: In reply to yours of June 5th, would say that we are well pleased with our mill. It has more than met our expectations. Although it was feared that the six-inch rolls would not prove a success, we find them to be complete in every respect. We are making as fine a flour as there is made in the state, and we guarantee our patent to be equal to Minnesota Patent. The mill has given us no trouble whatever since we started it, and for plan and workmanship, your Mr. G. Walterhouse deserves great credit. If your friends doubt it would be pleased to have them come and see for themselves.

Yours respectfully,

LEXINGTON MILL CO.

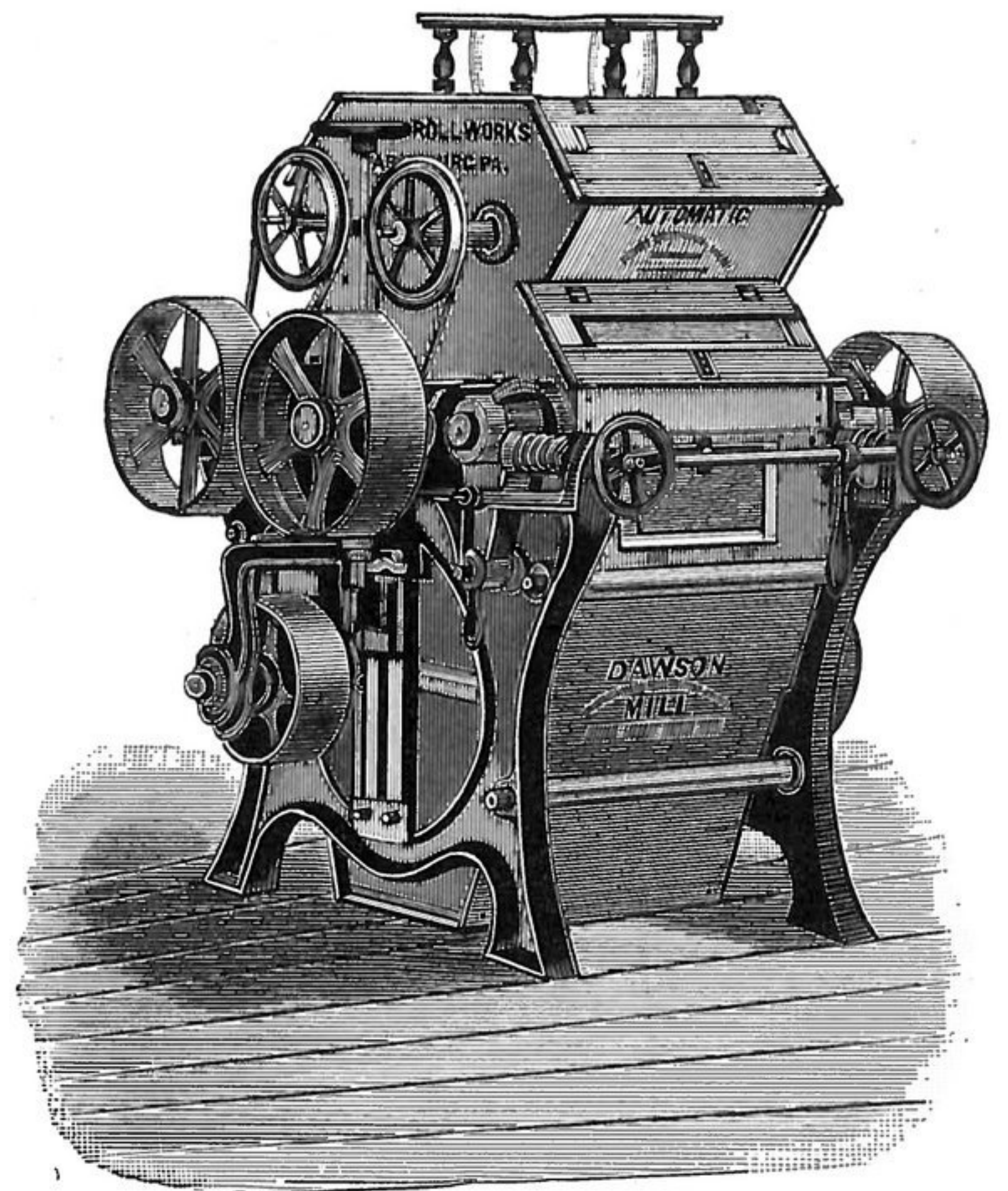
Dawson's Roller Mill

Is acknowledged to be the very best in the market. It has our Patent Automatic Centrifugal feeder, never failing to feed the stock the full length of rolls in an even sheet. It is the Latest and Best feed out, uses less power and is simple in construction. It can be placed on any style of machine with little expense. We use for roll bearings phosphor-bronze metal which will admit rolls being run at any speed without heating and with little friction, and uses little oil. We use the Dawson Corrugation, which is admitted the best in long or short system mills as the action is granulating rather than CUTTING.

We have a large plant to Re-grind and Re-Corrugate Rolls.

Owing to our late increased facilities and central location we are enabled to ship goods promptly on the shortest notice.

PARTIES CONTEMPLATING REMODELING THEIR MILLS OR BUYING ANY ROLLER MACHINES ARE REQUESTED TO PUT THEMSELVES IN CORRESPONDENCE WITH US.



FOR PRICE LISTS AND CIRCULARS, ADDRESS,

Dawson Roll Works, Harrisburg, Pa.



PUBLISHED EVERY MONDAY. OFFICES: { Corner Pearl and Seneca Streets,
Over Bank of Attica.
McFAUL & NOLAN, - - - PROPRIETORS.
THOMAS MC FAUL. JAMES NOLAN.

SUBSCRIPTION.

In the United States and Canada, postage prepaid, \$1.50 Per Year, in advance; remit by Postal Order, Registered Letter, or New York Exchange. Currency in un-registered letter at sender's risk.

To all Foreign Countries embraced in the General Postal Union, \$2.25 Per Year, in advance.

Subscribers can have the mailing address of their paper changed as often as they desire. Send both old and new addresses. Those who fail to receive their papers promptly will please notify at once.

ADVERTISING.

Rates for ordinary advertising made known on application.

Advertisements of Mills for Sale or to Rent; Partners, Help or Situation Wanted, or of a similar character One cent per word each insertion, or where four consecutive insertions are ordered at once, the charge will be Three cents per word. No advertisements taken for less than 25 cents. Cash must accompany all orders for advertisements of this class.

Orders for new advertisements should reach this office on Friday morning to insure immediate insertion. Changes for current advertisements should be sent so as to reach this office on Saturday morning.

EDITOR'S ANNOUNCEMENTS.

Correspondence is invited from millers and millwrights on any subject pertaining to any branch of milling or the grain and flour trade.

Correspondents must give their full name and address, not necessarily for publication, but as a guarantee of good faith.

This paper has no connection with a millfurnishing house and aims to represent the trade without prejudice, fear or favor.

Address all communications

THE MILLING WORLD,
BUFFALO, N. Y.

Entered at the Post Office, at Buffalo, N. Y., as mail matter of second-class.

SITUATIONS WANTED.

Advertisements under this head, 25 cents each insertion for 25 words, and 1 cent for each additional word. Cash with order. Four consecutive insertions will be given for the price of three.

WANTED.

A situation as first or second miller. Married. Rolls or stone. Well up in rolls. Good stone dresser. "MILLER," 1845 Niagara street, Buffalo, N. Y. 19

WANTED.

A situation with parties who appreciate good work, with rolls or buhrs on patents. Have the following recommendation from Miller Bros., Forest Grove, Ore., dated Nov. 10, 1887: "To whom it may concern: This is to certify that Peter Provost has been in our employ as head miller, and has given entire satisfaction. We believe him to be a very competent man, and cheerfully recommend him to the milling public." State wages you wish to pay. Address, PETER PROVOST, Menominee, Mich. 18

SPECIAL ADVERTISEMENTS.

Advertisements of Mills for Sale or Rent, Partners Wanted, Machines for Sale or Exchange, etc., etc., cost 1 cent per word, for one insertion, or 3 cents per word for four insertions. No order taken for less than 25 cents for one insertion, or 50 cents for four insertions. Cash must accompany the order. When replies are ordered sent care of this office, 10 cents must be added to pay postage.

WANTED.

A miller with some capital to help stock with, to take charge and run my mill. Address LOCK BOX 265, Clearfield, Clearfield county, Pa. 1720

FOR SALE.

Several good second-hand and new turbines of various styles. Second-hand price list and descriptive matter and prices of our new machines sent free. Every one interested in the shortest route to successful milling on rolls or in grinding corn and feed with the least expense of power, should address us before buying.

FLENNIKEN TURBINE CO.,
Dubuque, Iowa.

8tf

MILL MACHINERY FOR SALE.

One No. 0 Standard Combined Separator, Smutter and Brush Machine; new, best make.
One 20-Inch Under-Runner Portable Mill, French Buhr Stone, capacity 10 to 12 bushels per hour; new, best make.
One 14-Inch Vertical Feed Mill; best make, new, a bargain.
One No. 6 Dustless Separator; new, a bargain.
One No. 1 Full Rigged Combined Dustless Separator; new, a bargain.
Four Corn Cob Crushers, right or left hand, driven from above or below, best make; capacity 40 to 60 bushels per hour.
Two No. 1 Corn Shellers. New.
One No. 2 Purifier. New. Best make. A bargain.
For particulars address, FRANK SMITH, care of THE MILLING WORLD, Buffalo, N. Y. 5tf

M-I-L-L-E-R-S

Wanting Bolting Cloths should write for discounts on same before purchasing elsewhere to

SAMUEL CAREY,
17 Broadway, New York.

MILL WANTED.

I want to rent a good water power custom mill for a long term of years. For particulars address "W," care of THE MILLING WORLD, Buffalo, N. Y. 1619

FOR SALE.

Our 4-run mill, water and steam power; water nine months of the year; mill lately fitted up with Aug. Heine System of Bolting. Mill is in first-class repair; also saw-mill on same dam; about thirty acres of land with the property; good stand for a roller mill, fine grain country in Central New York lake region; four miles from Lehigh Valley Railroad. Call on or address, MOSS BROS., Waterburgh, Tompkins county, N. Y. 1417

FOR SALE.

A flouring mill at Washington, Tazewell county, Ill., three run of buhrs, good engines and mill complete. Good wheat section and practically no opposition. Present value of milling winter wheat 72 to 75 cents. Coal \$2 per ton. Railroad tracks to mill. Will sell very cheap on easy terms. Apply to or address, P. B. & C. C. MILES, Room 24, Chamber of Commerce, Peoria, Ill. 1417

WANTED.

Agents, a fine memento of Gen. Grant taken by photography four days before his death at Mt. McGregor Cottage, unaware to himself, in all his simplicity, while reading a newspaper with his old silver spectacle on in the early morn of July 19, 1885; the only household memento of the man who made a 25 cent greenback worth 100 cents on the dollar and saved the country after all other commanding generals had failed; surrounding this last picture of the old hero are placed 11 photographs of his entire family and his sons' wives, all the most accurate ever made; these splendid photographs were made by J. T. Lloyd, who projected all the military maps used by Gen. Grant during the war, and who certifies to their accuracy; handsomely printed, with cord attached, ready to hang on the wall, for the nominal price of \$1, and as fine as an oil painting, fit to grace the walls of a palace; agents wanted, to whom exclusive country rights will be given; money refunded on demand if not satisfactory. THE GRANT MEMENTO CO., Box 2256, Boston, Mass. 18

PETER PROVOST'S VALUABLE PATENT FOR SALE.

SOMETHING ENTIRELY NEW. A RARE CHANCE FOR SPECULATION.

No wide-awake manufacturer will deny that this is an age of progression, and that there is some thing new and more useful taking the place of the old, and still there are a few old fogies, who shut their eyes to the progress of art and science and say that patents are all humbugs and imagine every thing is perfect, just as our great-grandfathers thought when they called Fulton "crazy" when he discovered the use of steam. It is so with heating wheat and steaming wheat for cleaning. They say: "Some wheat does not need steaming, Peter Provost." They do not take into consideration the fact that nearly every thing of any value has one day been patented. Had it not been for inventors, we would be in the same state of affairs as when Adam and Eve were without even a suit of clothes. Then, certainly, no sane man can deny that inventors are the founders of improvement, and that it is right they should be protected by patents, securing to them a remunerative reward for their labors. When someone invents new and more useful machines, like Peter Provost's grain-scourer, patented Feb. 26, 1889, and No. 398,538, or tools and implements better than those in use, the wise manufacturer, who possesses that quick perception and sound judgment that eminently qualify him to discriminate between the truly useful implement and that which appears to be such, at once proceeds to investigate the merit and utility of the invention, to see whether or not it will pay to invest in its manufacture. I will sell state rights. Address, PETER PROVOST, Menominee, Mich. 1819

THE crop reports in the United States continue to be confused almost hopelessly. There are conflicting statements about the extent of damage done by the green wheat midge, by the rains in some sections and the drouth in others, and by other important factors in the complex grain problem. One thing is certain. The brilliant promise of the early months of the season, pointing to a 500,000,000-bushel crop of wheat, will not be realized, if even a percentage of the reports of damage prove to be true when the garnered crop shall set all doubts at rest.

DURING a recent visit to the city of New York we had the pleasure of being shown through the flour-sack establishment of Mr. W. A. Bingham, whose advertisement appears in this issue, and we were not a little surprised at the progress that has been made and the perfection that has been attained in the processes of manufacturing these goods. Strong and always reliable sacks, printed in neat and attractive styles, are what the millers want, and we are sure they will get them at this New York establishment. Mr. Bingham is a young, energetic business man, very anxious always to please his customers, and we bespeak for him the generous patronage of all millers.

SOME of our friends, who are inclined to think the Milwaukee "official settlement" of the Bogus Buffalo Resolution satisfactory and honorable, just and equitable, should not forget the explicit affidavit of the Buffalo reporter, who copied the resolution from the original document immediately after it was read to the convention. They should not forget that that gentleman knew none of the individuals or firms mentioned in the resolution, that no attempt has ever been made publicly to accuse or convict him of changing the resolution when he was copying it for his journal, and that the so-called "proof" of the "genuineness" of the bogus resolution "officially" adopted has never been given to the public. Until the "official" managers make an effort to convict the reporter of garbling that resolution, all fair-minded men will continue to believe that the Buffalo journal published the resolution exactly as it was read, and that the resolution "officially" accepted represents, not truth, but willful, wanton, discreditable error. It will long be remembered against the actors in the Milwaukee by-play fiasco.

POINTS IN MILLING.

IF there be one place on earth in which the Jack-at-all-trades is out of place, that place is the flouring-mill. If there be one place on earth where the Jack-at-all-trades is an absolute necessity, that place is the small mill, where one man or two men may be required to attend to the processes that ought to be attended to by 5 men or 10 men. Generally, according to the old saw, which has all the ignorance as well as all the wisdom and experience of the ages to back it up, "the Jack-at-all-trades is master of none." The originators of that saw would have to file its teeth to make it bite on the millers of this late age, some of whom are Jacks-at-all-trades in their line, and perfect masters of each particular point.

THE small mills are great schools. The smaller they are, and the fewer hands they employ, the greater their value as schools for developing thoroughly well-posted millers. Where a young man, of an ingenious turn of mind and hand, is put to learn milling in a small, compact, well-equipped modern mill, the chances are that, when he comes out, he will be as nearly complete in every way as it is possible for a learner to be. He will have had a chance to inform himself thoroughly, if he be studious as well as ingenious, concerning steam, water or wind power, the construction of dams, the building of races, the hanging of wheels, the value of fuels, the dressing of buhrs, the corrugation of rolls and the make-up, functions and achievements of all the recent machines used in flouring-mills.

SUCH a Jack-at-all-trades is not to be despised. He can work at the trade of mill-wright, at the trade of fireman, at the trade of engineer, at the trade of builder, at the trade of stone-man, at the trade of flour-making, and at the trade of book-keeping. He will know how to select grain. He will have a commercial knowledge of all the trades that are contained in the complicated trade of milling. What owner of a small mill is not ready to admit that such a Jack-at-all-trades, clean-cut, industrious, intelligent, competent, efficient and always ready to attend to any thing requiring attention, is a man worth his weight in gold?

HERE and there I find millers taking a direct interest in the kinds of wheat sown by the farmers from whom they draw a part or all of their supplies. This is well. The miller has the perfect right to demand from the farmer the sort of wheat that will best serve the trade to which he caters. The farmer decides what sort of flour he will take from the miller, and if the miller will not or can not furnish the kind the farmer wants, the latter will go elsewhere to buy. That is right. It is equally right for the miller to make a similar demand on the farmer for desirable kinds of wheat.

GENERALLY the farmer feels like sowing this or that particular wheat simply because it will yield more grain to the acre. He may think it unjust for the miller to ask him to sow any other variety, which may yield less to the acre, but he should remember that very often the largest yield implies inferior quality in some important essential. The large yield may be coupled with a lack of gluten or some other element. The miller should be the dictator in this matter. The farmer will soon learn that 2,000 bushels of wheat grown on 50 acres of land, left on his hands because it will not serve the neighboring miller's purpose, is a far less profitable crop than 1,800 bushels of another wheat grown on the same 50 acres, which will serve the miller's purpose and which sells at once at the highest market price. One season ought to be a long enough time in which to teach the grower that the grinder, always in touch with the consumers, is the man who should say what kinds of wheat he needs.

I NOTICE the statement made by the Roumanian wheat-growers that their wheat, though smaller in berry than the Austro-Hungarian and American wheat, will "make more flour." What do the Roumanians mean by that statement? It would probably yank the scientific verities out of gear to

demonstrate that the small-grained wheat will require less bushels to make a barrel of flour.

THE new winter wheat now coming into market is said to be a decided improvement on the article of 1888. I have seen some specimens from the earlier sections and from California that certainly are very fine. American flour-makers, especially those who grind winter grain, are quite sure of an abundant supply of fine grain for the coming campaign. Their anxiety will soon be over. The spring-wheat millers must remain on the anxious seat for a time yet. At this writing their prospect seems good, but there are many things that may happen to hurt that prospect. Should present promises be fulfilled, they will have no difficulty in keeping up their end with their winter-wheat competitors.

MUCH really fine and high-grade wheat is seriously damaged by storing in tight receptacles immediately after threshing and before it is sufficiently dried. Too speedy storing means musting and souring, and the miller is the man on whom falls the trouble arising from that cause. Every important storage receptacle should be provided with the means of stirring and airing the new grain, especially when the weather immediately after storing is unusually warm.

MILLERS are proverbially honest. That is probably the explanation of the fact that millers are generally so willing to trust other men too far. Being honest themselves, they naturally suspect others of the same weakness, and generally they pay for their trust in others. Don't be over-suspicious, but it is better to be over-suspicious than over-confiding. It will pay to watch even the men in whom you may feel like confiding unquestionably.

THE LATEST ENGLISH FOOD FAD.

Great Britain has a new fad in food. It is described by a writer in the London "British Baker, Confectioner and Purveyor" as follows: At the Universal Cookery and Food Exhibition, held at the Riding School, Knightsbridge, the London trade was very imperfectly represented, the leading bakers being conspicuous by their absence. Nevertheless, there was at the far end of the exhibition one rather interesting product that hailed from the neighborhood of Battersea, and which has received from the directors of the company the name of "Frame Food." This food consists of the nourishing phosphates and albuminoids that are contained in the wheat-berry, which are usually given to us in an unprepared state, that is, when they are enveloped by the cellulose and protected by layers of bran in such a way as to render them almost impossible of assimilation by the human stomach. "Frame Food," from this point of view, is evidently the missing link; because we all acknowledge that whole-meal bread, with its phosphates, contains more nutriment than white bread; yet most of us know that, in spite of its superior ingredients, it is really debilitating to the human system rather than nourishing, for the simple reason that its nutriment can not be digested except by the most exceptional of stomachs, and therefore passes out of the system unutilized; and also that, on account of the irritating influence of the branny particles on the delicate lymphatic vessels and glands, the other foods consumed at the same time can not be absorbed and assimilated. The producers of this food, which is purely and simply an extract of wheat, are really, therefore, acting as a powerful stomach, so that the community should be able to enjoy the gifts of nature. Their invention comes to light and is pronounced necessary on account of the degeneration of the human digestive organs: we could dispense with it if we would but train our stomachs to do their own work, the same as the minds of our forefathers were trained to remember and hand down long poems like those of Homer, simply because they were obliged to, not having the facilities of writing them.

The composition of "Frame Food" extract is, roughly speaking, about 80 per cent. of organic matter, 10 per cent. ash and 10 per cent. water. The organic matter consists of albuminoids and dextrin, otherwise called gum, in about

equal quantities of 20 per cent. each of the whole extract; and of sugar and starch also in like quantities of 13 per cent. each. The chief constituent of the ash is the potassium phosphate, which is composed of about equal quantities of phosphoric acid and potash, and to which so much importance is attached on account of its being the material used for the formation of the bones and teeth, or, in a word, the frame. It exists in the extract in question to the extent of about 8 per cent. and in flour rather under one per cent. "Frame Food" extract is a brownish powder and has a pungent smell; it is not produced to be used as a substitute for flour, but merely to be mixed with it in certain proportions; in small bakings 1 ounce of extract must be used to 7 pounds of flour. It can also be used in puddings and the like, and also in sweets for children, whereby the teeth of the latter will not be, according to what, however, is a fallacy, spoiled, but greatly improved.

Before passing on too rapidly to the employment of this extract for practical purposes, let us see how it compares with flour as regards its other constituents. In the case of carbo-hydrates, that is, the heat-giving substances, we see their quantities are transposed; in the extract, starch is small as against about 65 per cent. in flour, and dextrin and sugar are conjointly 35 per cent. as against 4 in flour. This difference, from a baker's and from a nice-looking-loaf point of view, tells against the extract, as dextrin, in direct opposition to starch, causes the bread to turn a nasty color before leaving the oven. On the other hand, the sugar is desirable, as it becomes converted into the carbonic acid gas and alcohol. The extract also owes its high color to the coloring matter contained in the epispem, the fourth coat of the wheat-berry. We also see that albuminoids form a good portion of the extract, being double the amount contained in flour; but it is a question whether this richness of albuminoids in bread is desirable, because in a mixed diet we obtain all that is necessary and do not require bread to be such a perfect food, or we shall become overstocked with nitrogen and fall ill in consequence. (The albuminoids present in "Frame Food" extract are only such as are in the wheat, and therefore the natural proportion.)

We should fancy that the poor, who have not the means of procuring a mixed diet, would patronize whole-meal bread, since it is generally thought to be the more nutritious; but we find in practice that they do not consume so much of it as their wealthy neighbors; we can not count on them consuming much of the "Frame Food" bread, as it could not be more puffed than whole meal and will, as shown below, be just as expensive. (The poor do not like whole-meal bread. If they like "Frame Food" bread, the failure of whole-meal is no argument against the poor using "Frame Food" bread.) It is erroneous to suppose that, by having more albumen in our bread and suddenly increasing our supply of this ingredient, we shall be rendered capable of greater exertion; only when we have been reduced by illness or when we are increasing our muscular frame by judicious training will an increase of albuminous food give us greater strength. And if we are taking an excess of albuminates, and their elimination be not aided by active muscular exercise, the system will soon get in a state of plethora, that is, will have too much fluid albumen, and, if continued, uric acid will be rapidly formed, with the result of feverish symptoms and perhaps diarrhoea, making us weaker than when we started. The most powerful of soluble albuminoids, cerealine, on account of its active influence on a starch solution, is sometimes thought to be of great value as a digestive agent; but its diastasic or digestive power is destroyed by the heat of the oven in baking.

Wishing to see the effect of this extract from a palatal point of view, I made a few loaves, adding the powder, as prescribed, in the proportion of 1 ounce to 7 pounds of flour. The first thing that struck me was that the bread had the appearance of having been made of low-class flour; it was not brown enough to be recognized as a brown or patent bread; it tasted much better than it looked. I can hardly say there was a pronounced flavor about it, yet it was agreeably different to the white bread made at the same time; it

certainly seemed more satisfying and has kept pleasantly moist. It does not possess the medicinal properties characteristic of whole-meal bread. The cost of the extract is 3d. per ounce, and since an ounce will only make one gallon of the bread, cost at first sight seems a serious drawback; but the extract can be obtained in the moist state at 1s. 6d. (trade price) per gallon, and a gallon of extract will suffice for ten gallons of bread, which reduces the cost to a halfpenny per half-quarter loaf, which, considering that there is no royalty to pay for the use of any patent and no extra materials or utensils to buy, as is the case with some patent breads, can not be considered very high. In conclusion, there is much that can be said in favor of "Frame Food" bread and little that can be said against it. It ranks well as a food for children and athletes. It is quite a new thing, and a large section of the public like any thing for a change; therefore, since our first outlay need not exceed 1s. 4½d., it recommends itself to us for a trial rather favorably than otherwise.

ANOTHER THEORY OF EXPLOSIONS.

Thomas Marshall, for many years a manufacturer in Pittsburgh, Pa., has advanced this theory to account for many of the mysterious boiler explosions, which have been of frequent occurrence lately: "Some years ago a tub of cold water was standing in my foundry, and something prompted me to pick up a ladle of molten metal and pour it into the receptacle mentioned. Some of my employes, who were standing near by thought me crazy and tried to prevent my contemplated action. They reasoned that even children knew that such a proceeding meant an explosion. I answered them: 'That would be the result with a tiny pool of water on the floor, but I do not believe it will occur under these circumstances.' My audience disappeared, and the next moment I poured the glowing, melted iron into the tub. The effect was harmless, yet startling to my mind. There was no explosion, but instantly a powerful jet of flame shot upward 15 feet in height from beneath the surface of the water. It resembled in force, noise and every other particular the natural-gas flame of to-day. I then and since then have bent my reasoning to the cause of that effect. I have reached a partial conclusion. Of this I am convinced: The sudden collision of the molten substance immediately decomposed the water, and it immediately resolved itself into its hydrogen and oxygen, which, encountering the air, became a magazine of incalculable power, a doubly powerful dynamic agent. I certainly apply this theory of mine to boiler explosions in general. I know there are many persons who believe there is a force, yet undiscovered, which plays this havoc; I know there is such a force, but can not say what it is. That it is possible to identify its origin I believe, and I am persuaded its solution is only a question of time."

GRAIN GROWING IN SOUTH AMERICA.

Flour-makers and grain-growers in the United States will read with interest the following article on grain-growing in South America, taken from the report of a New York grain-exporter, who has recently ended a special investigating tour of a year in the Argentine Republic. He says: In the first place the climate and temperature are about the same as in the United States south of the latitude of New York and north of New Orleans, or like that of the Middle and Southern States lying between parallels 30 and 40 degrees north, as the wheat and corn belt of La Plata does, between 30 and 40 degrees south latitude, extending from the Province of Buenos Ayres on the Atlantic coast, south of the La Plata's mouth, and from this river on the east to the Province of Santa Fe on the north, a distance of 600 miles; thence back to the base of the Andes Mountains, comprising an area 600 miles long by 400 to 500 miles wide, or 1,200,000 square miles in the Argentine States. This entire country is all one broad fertile valley, or prairie, sloping gradually back from the coast to the foot of the Andes Mountains, without forests, table lands or plateaus, and all available for agricultural purposes. As yet only about 200 miles of this valley in width has been tilled, and this only partially and on the eastern side nearest the coast and the rivers, where transportation

is available and the lands require no irrigation. But of the 600 miles in length only the Provinces of Buenos Ayres and Santa Fe have been brought under cultivation, and these comprise little if any more than half this area in length or width. The former on the south and the latter on the north are respectively the two great corn and wheat producing provinces, with the city of Buenos Ayres and river towns above the chief corn exporting ports, and the city of Rosario, the commercial center of the Province of Santa Fe, the chief wheat-exporting point. There is also some wheat raised on the east side of the Parana River, between it and the Uruguay, in Entre Rios, but only in a small way.

The balance of these prairie lands constitute the great cattle-ranges, which were first located along the eastern coast and on the west of the La Plata River, but they are steadily being crowded back into the interior by the growers of wheat and corn. Buenos Ayres and out ports are the chief center of home and export trade in cattle and beef products. The soil, like that of our Western prairies, is rich in its virgin strength, and the whole area is so fertile that it requires only to be tilled to produce good crops. The western half will generally need irrigation, which has not yet been introduced except in a rude and small way, because there are plenty of lands not requiring it which are yet untilled. Outside of the Provinces of Buenos Ayres, Santa Fe and Entre Rios irrigation is required, and hence these are the chief producers. These lands are mostly owned in large tracts of 1 to 50 square leagues, like the original cattle "camps," by the rich native and English cattle kings, who lease them out, generally on shares, costing the farmers 4½ bushels per acre, or \$4 Argentine money, for raising wheat, and in the proportion of about 2 bushels of corn to 1 of wheat per acre, for raising corn. With an average crop of 13 bushels per acre and an average price of \$3.60 Argentine money per 220 pounds at Rosario, or nearly \$1 in paper, or 60 cents gold per bushel of 60 pounds, the cost of producing wheat would be about 30 cents paper money or 18 cents gold per bushel, after allowing an average of 10 cents paper money per bushel for inland transportation by railroad, on which the rates are very high, from an average of 100 miles interior from export points. To this must be added the interest on the land, valued at \$100 paper money per acre at near, to \$10 per acre at points distant from seaports and railroads, cost of farm machinery and teams, which are generally supplied by the landlords to the farmers, who are mostly Italian immigrants, brought over under contract with the owners of the land.

With an average crop of 75 bushels of corn per acre and an average price of about 60 cents per bushel in paper dollars for 56 pounds f. o. b. vessels, or 50 cents at the railroads, the cost of production would be about 17 cents per bushel paper money or 10 cents gold after allowing for inland freight as above on wheat. The price of corn at seaports averaged about \$2.45 in Argentine dollars per 100 kilos free on board vessels. This is equivalent to 220 pounds or 4 bushels, or about 60 cents per bushel. There are no statistics of trade kept in regular shape by the Government, and it is very difficult to obtain information in regard to the grain exports, or crops, or area under cultivation. But the largest exports of grain the country ever made were two years ago, when about 8,000,000 bushels of wheat and 5,000,000 bushels of corn were shipped, chiefly to Europe; but there will be no wheat to export this year, if enough for home use, as the hot winds from the interior did serious injury to the Province of Santa Fe last season, as these succeeded cold nights in the spring and rains during harvest. The two large flour-mills of 2,000 barrels capacity, in Rio Janeiro, are running half time or less for want of wheat, which they drew from the Argentine States. These mills are both roller patent process, one new and owned by English capital and the other by natives and remodeled. There are also flour-mills, some of them fine modern mills, in Buenos Ayres, Rosario and Santa Fe. The corn crop this year is a good one in quantity, but is very soft, owing to the unusual and protracted rains of their last summer. This will be available for export, as it had been argely sold to exporters before harvest, which begins in

March and ends in April, while the wheat harvest begins in November and ends in December. As to the cost of ocean freights on grain from the La Plata to the United Kingdom, they average about double those from New York, though they have been as low as 8 shillings per ton and as high as 25 shillings by steam, and in proportion by sailing vessels, which do a large part of this trade.

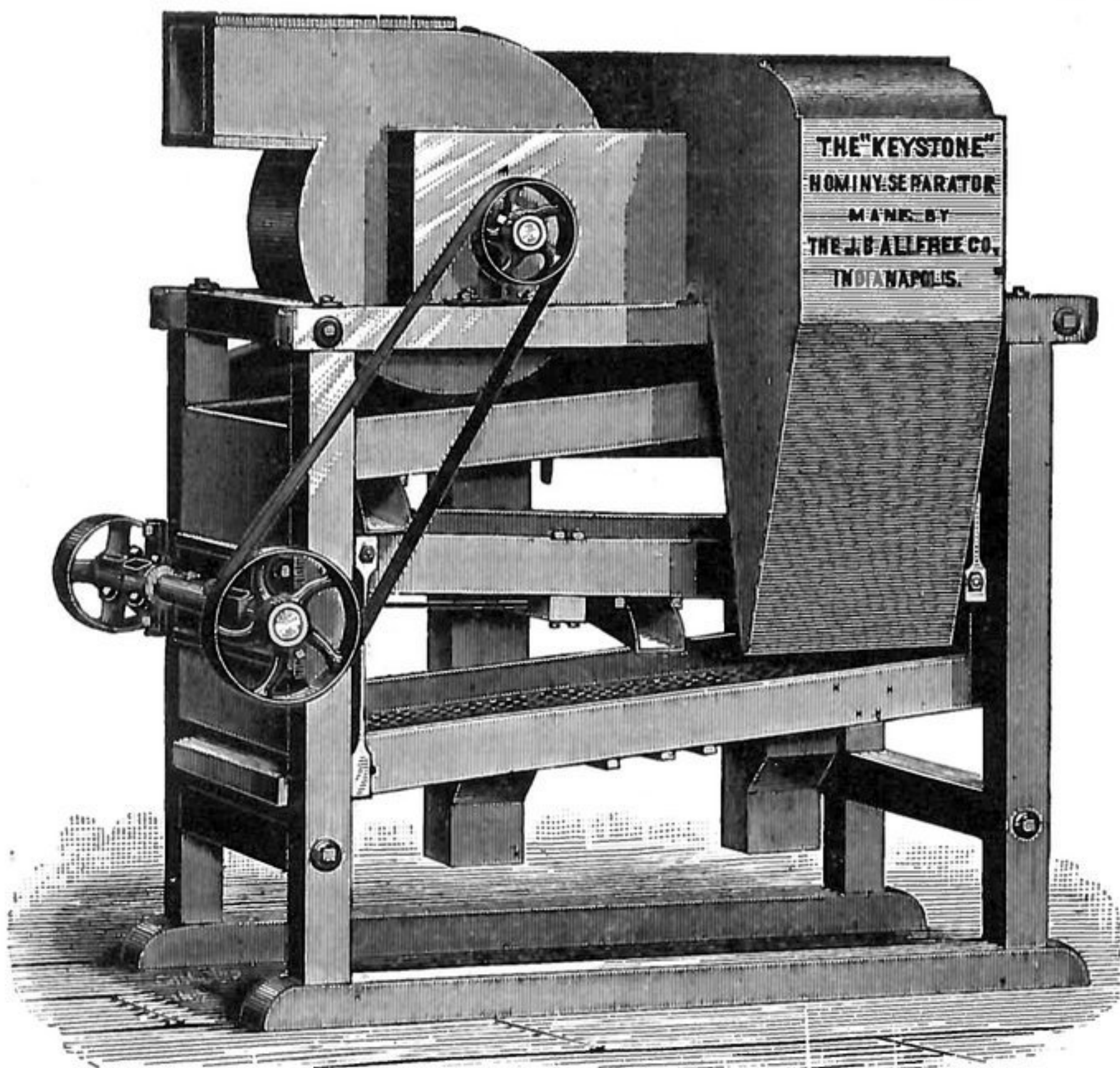
As to the values of land and "improvements," he says: "I saw lands 80 to 90 miles inland from Rosario renting at \$4 per acre for wheat raising, and also saw lands that were 70 miles from that point and 25 miles from a railroad sold at \$18 per acre in Argentine money, which is at 40 per cent. discount on the gold or American dollar. These grain farms, or 'camps' as they are called, are seldom fenced and have no improvements in shape of either houses or barns, the farmers living in huts, while they have no live stock, except on the great cattle-ranges, aside from the teams needed for ploughing and tilling the land and hauling the grain to market. Farming is conducted in a very primitive style, and after thrashing and bagging their wheat, it lies in the field until marketed. In case of protracted rains the grain is damaged. But such rains are very unusual during the harvest season. While the sun is so warm and climate so dry that ordinary showers do no harm, as the moisture is evaporated before it heats the grain. The reason of this is, in part, that lumber is too high to enable them to build granaries, as it is all imported from the United States or Canada. But the chief reason is that the farmers have not got so far along as to build. There is plenty of timber in the high mountain regions of the Andes and of the equator, which are generally hard woods, but not on the plains, while it costs more to get the native timber out than to import it. Although canvas covers for grain in stacks or bags would be still cheaper and easily available, they are not utilized by these easy-going children of Sunny Italy. They use American machinery generally, and hence are able to produce their crops very cheaply, even with their ignorance of farming. Their wheat is red winter, and though the present crop is so poor that there will be no surplus this year, it is one of its export staples. They are growing some white wheat, but red is the staple; and, in an average year, is equal to our No. 2 red winter wheat in quality as well as yield. This is chiefly raised in the Province of Santa Fe. But for corn, it is said, there is no soil or climate in the world more favorable; and, while the yield averages 50 to 75 bushels per acre with the present indifferent cultivation, it will yield over 100 bushels to the acre, when the ground has been well tilled and the crop well tended and carefully harvested. The quality of corn is good, being of high color or yellow, and small kernel, like the Danubian corn rather than like North American. As to the cost of production, compared with other countries and especially with the United States, the results of investigations were, that with economical and intelligent farming there was no country better adapted to grain raising than the valley of the La Plata, and especially for corn."

The means of transportation are ample by water for hundreds of miles into the interior, the La Plata being navigable for vessels of large draught its entire length of 400 miles to Parana and Santa Fe, while the river Parana, the chief tributary of the La Plata, is navigable for vessels of medium draught for 500 miles above that city. Rosario, with 70,000 population, is one of the chief shipping points on the La Plata, and the exports of wheat from there are larger than from any other port, while the export of corn, like those of tallow, hides, wool and beef, are controlled from Buenos Ayres, though shipping-ports are all along the La Plata and the Atlantic coast south of that city. The fresh-beef export trade has been unimportant until recently, under a guarantee from the Argentine Government of 5 per cent. upon an investment up to \$8,000,000. Santa Fe and Parana are commercial cities of about 20,000 population each, situated at the head of the La Plata and at the mouths of Parana and Salado rivers, the two great tributaries of the La Plata. They are both grain-markets as well as centers of trade in hides and tallow, and although their harbors are navigable for ocean steamers they are not dependent upon

water transportation, but are connected by railroads with the other chief seaport centers of the La Plata and the interior country. The chief railroads of the country run between Buenos Ayres on the south and Rosario, Santa Fe and Parana on the north, a distance of 400 to 500 miles, with independent systems extending back from these centers towards the Andes from 200 to 500 miles west of the La Plata, and the same distance north of Santa Fe, while there are two trunk lines running from Buenos Ayres south and southwest 300 miles to the south of the Province of Buenos Ayres. The larger of these is the Great Southern, and the other the Great Western. Between Buenos Ayres and Rosario there is one road running, the Buenos Ayres & Rosario. There are also several more lines running from the seaboard to the Andes and nearly to the center of the Continent in the north. The country has 4,000 miles of railroads, built chiefly by English capital under concessions of great value from the Argentine Government.

THE KEYSTONE HOMINY SEPARATOR.

The "Keystone" hominy separator, illustrated herewith, is designed to concentrate the preparing of hominy stock "as it comes from the hullers or degerminators" for milling into a very small space and on one machine, and at the same time place the whole operation under the eye and control of the miller. Heretofore the work of cooling, scalping



THE J. B. ALLFREE CO.'S HOMINY SEPARATOR.

and grading and purifying has consisted of three or four operations, involving the use of long conveyors for cooling, hexagon reels for scalping and grading, and suction fans and several aspirators for purifying. By the use of the "Keystone" hominy separator the entire work of cooling, scalping and grading and purifying this stock is condensed into one operation. The superiority of shaking sieves for separating corn goods is too well known to require further remarks on the subject. This machine consists of a number of screens in one frame, making six or more separations and grading the material for purifying in even sizes. The application of the air currents to these different grades is accomplished by an improved method of aspiration, whereby the stock is thoroughly purified, without waste of good material, and the bran is caught in a settling chamber and prevented from passing into the dust-room. The stock in passing over the several screens is thoroughly cooled and is in splendid condition for grinding after leaving the machine. It performs its different functions in a most perfect manner, takes up but a small amount of space, requires but a nominal amount of power, is constructed of the very best materials in a most thorough and substantial manner and is unequalled in fineness of finish and neatness of design. Full information may be had on addressing the makers of this superior machine, the J. B. Allfree Co., Indianapolis, Ind.

THE PRINCIPLE OF SCOURING-MACHINES.

The principles upon which depend the operations of scouring-machines for wheat are, first, the scouring of wheat against itself by being retained in a cylinder and kept in circulation by fluted discs keyed on the center shaft and revolving upon fixed discs, between which the wheat traverses from center to circumference and back again several times, working its way to the outlet at the bottom, sometimes against centrifugal force, grain rolling against grain in the process. There are also other excellent methods of scouring wheat against itself. Another is that of scouring by means of beaters, adjustable only when standing, fastened to an inclined shaft revolving at 200 revolutions, at a distance of 1 to 2 inches from a slowly revolving woven-wire cylinder. These are known as the old barrel screens. There are also vertical scourers, which consist of quickly revolving beaters against a perforated jacket. This style scours all wheat alike. There are discs of metal, stone and brushes revolving against each other on horizontal shafts, and they may be adjusted in motion. There are machines which hold the wheat in the cylinder until it attains a given height. The outlet is regulated by a valve which floats on top of the wheat at the desired height. Inside are revolving beaters, and stationary projections from the surrounding jacket. They require much power to operate.

COMMENDATORY COMMUNICATIONS.

THEY LIKE THE CURTIS DAMPER.

The Curtis Regulator Co., of Boston, Mass., report larger and increasing sales of their patent damper regulator both at home and abroad. They are constantly in receipt of communications similar to the following:

MUNCY WOOLEN MILL,
MUNCY, PA., JUNE 22, 1889.

MR. NELSON CURTIS, BOSTON,

DEAR SIR: Your favor of the 19th inst. to hand, and in reply we would say that we ordered one of your damper regulators through Mr. J. J. Lugerton and have it attached to our boiler, and we must say that, if it keeps on working as it does now, it will please us to our entire satisfaction. It opens and closes on 1 pound variation.

Yours truly,
COULTER, ROGERS & CO.

Johnson & Kirkpatrick, flour-mill, Lebanon, Tex., proposes to move to McGregor, Tex.

SPECIAL NOTICES.

LIBERAL OFFER.

With a view of increasing our subscription list, we will send a copy of R. J. Abernathey's new book, "The True Short System" (Price \$2.00) and "The Milling World" for one year at the very low price of Two Dollars. Renewal will be treated same way. This offer will only continue for a limited time. Now is your chance. Send in your subscriptions at once.

Address,
THE MILLING WORLD, BUFFALO, N. Y.

BOLTING CLOTH.

Do not order your cloth until you have conferred with us. It will pay you, both in point of quality and price. We are prepared with special facilities for this work. Write us before you order.

CASE MANUFACTURING CO.,
Columbus, Ohio.

Office and Factory, 5th Street, north of Naughten.

TOLEDO MILL PICKS AND STONE TOOL MFG. CO.

Manufacturer

and Dresser of

MILL PICKS.

Made of the best double-refined English cast steel. All work guaranteed. For terms and warranty, address, GEO. W. HEARTLEY, No. 297 St. Clair Street, Toledo, Ohio. Send for Circular.

N. B.—All Mill Picks ground and ready for use (both old and new) before leaving the shop. No time and money lost grinding rough and newly dressed Picks. All come to hand ready for use.

ALSO MANUFACTURERS OF

Shafting, Pulleys, Hangers, Coupling, Machine and Jobbing, Etc., Etc.



SILK FROM CELLULOSE.—A French chemist has produced an artificial silk by the chemical treatment of cellulose. He obtains a thread which resembles silk very closely and is equally strong and elastic. It is not attacked by water, cold or rain, nor by the acids and alkalies moderately concentrated. A great drawback to this silk is that it is extremely inflammable, but it is possible that by a change in treatment it may be rendered less combustible. If this is done, the new textile fabric will be of the greatest value.

GENERAL NOTES.

THE grand total of the debts of all the States of the Union is set down at about \$200,000,000. Virginia heads the list with nearly \$32,000,000; then follow Massachusetts \$31,000,000; Tennessee \$17,000,000; Pennsylvania \$15,000,000; North Carolina, Louisiana and Maryland follow in the order mentioned. The great State of New York has but \$7,000,000 of debt; Ohio and Minnesota about \$4,000,000 each; New Jersey less than \$2,000,000; Kansas about \$1,500,000; California, Delaware, Kentucky and Iowa are practically out of debt, and Illinois, Wisconsin, Colorado and West Virginia are the only States that are free from debt. One of the peculiarities of the case is the fact that Nevada, with practically no public debt, has the highest rate of taxation of any State in the Union, 90 cents per \$100; and Massachusetts, with the next largest indebtedness, has the lowest rate, 11½ cents per \$100.

MILLING WHEAT IN INDIA.

Writing from Bombay, India, under date of May 16, George Miller, jr., says in a letter to the London "Millers' Gazette." In your issue of April 15 you ask me several questions, which I will now endeavor to answer. First. Do I mill my wheats in a dry or damp condition? Damp, certainly. I wash the hard and dirtier varieties, then run them together with cleaner wheats into bins, and allow the whole to lie about 24 hours before cleaning and delivering to the mill. I quite agree with Mr. Miller, when he writes that it is impossible to mill Indian wheats dry, if he means, as I take it he does, that by so doing you will only produce a flour fit to be classed with offals, a flour which bakers would not take as a gift for use in their bakeries. I have experimented with dry Indian wheats several times, being desirous of producing a very dry flour for our export trade; and, as "Anglo-American" implies, found it a very easy matter to mill it; one can mill any kind of grain, in any condition, but it does not follow that the results will prove satisfactory either to himself or to his customers; at the same time I found it a very undesirable method of milling Indian wheats. A miller does not like his customers to abuse either himself or the flour he manufactures, and this was nearly all I gained, by milling on what "Anglo-American" terms the only correct and honest method, from those of my customers who bought this flour. Experience teaches me that it is impossible to mill Indian wheats dry, and by so milling be able to produce a flour that will give satisfaction to customers. Many Indian wheats you can not mill satisfactorily without washing, and the best of them give their best milling results when damped, as judicious damping facilitates the milling and enables you to produce a flour which the bakers here prefer far above an extremely dry flour, which they can not make into decent bread.

Second. How many sorts of wheat do I use? My mixture has sometimes eight kinds of wheat, never less than four. The proportions run usually about half red to half white. I do not mean single varieties. We have only one wheat in India which, I think, would give a good all-round flour

milled singly, named Khandwa, a hard, amber colored wheat, much prized by the high-caste Hindoos, by whom it is largely consumed. I do not think any of it goes to Europe, at any rate I never saw any in England, nor have I heard of any shipments of this variety from here. It is a dear wheat, consequently, ruling flour rates being very low, we can not afford to use it. For the rest, some we might mill singly, but this would give the bakers the trouble of blending flours differing widely in constitution and quality, which they do not desire; besides, we can not afford the time necessary for re-clothing our mill to suit the different varieties of wheats, let alone the expense of a double set of silks, together with the rapid wearing out which would result from so much changing. Such things are nothing according to "Anglo-American;" nevertheless, care taken that no more than is needful of either the one or the other is lost or wasted goes a long way nowadays towards putting the mill-owner's balance on the profit side of the balance-sheet at the end of each financial year. I think we get our wheats in the mill cleaner than you do in England; some kinds contain 5 to 6 per cent. refraction, but our average does not exceed 3 per cent.

THE VALUE OF STEAM-PIPE COVERINGS.

In the "Michigan Engineers' Annual," which is the report of the proceedings of the Michigan Engineering Society, of January, 1889, Prof. M. E. Cooley, M. E., of Ann Arbor, gives the following experience on the value of covering steam-pipes: "The benefits of covering steam-pipes to prevent radiation are strikingly illustrated by the following example: The Thomas Houston Electric Light Plant in Ann Arbor has about 60 feet of 7-inch pipe connecting the boilers with the engines, and two large steam-drums above the boilers. In March, 1887, the steam at the far end of this pipe was tested to determine the amount of entrained water, the pipes and drums at the time being uncovered. An average of nine experiments gave 31.01 per cent. of moisture. In June of the same year, after the pipes were covered with magnesia sectional coverings, the quality of the steam was again tested, the average of five experiments giving 3.61 per cent. moisture. The tests were made by the same men, from the same connections and in the same manner. The pipes and steam-drums in March were subjected to a draught which, of course, aided the condensation. Enough water passed into the cylinders to retard the engines, producing a disagreeable noise. In June the weather was warmer, and the pipes and steam-drums were well protected; the quality of steam at the boilers was tested in June and showed about three per cent. of moisture. Assuming that 100 I. H. P. were being developed at the time, and that each horse-power required 30 pounds of steam per hour, we would need 3,000 pounds of steam. If the steam is assumed to have 25 per cent. entrained water due to condensation in the pipes and connections, then 4,000 pounds of steam will need to be produced in the boilers, or 1,000 pounds more than necessary. To produce this steam will require about 125 pounds of good coal per hour, or 1,000 pounds per day of eight hours. One-half ton per day at \$3 per ton for 300 days = \$450, which at six per cent. pays the interest on \$7,500. The actual cost of the covering put on complete probably did exceed \$150."

CANADIAN millers are still successfully failing to get the Dominion government to protect them against American competition. They are now proposing to form a "national" association, or probably they will call it a "Dominion" association, to push their interests with the government. If the Canadian flour-makers form an association, it is to be hoped that it will be a more imposing and impressive body than our own so-called Millers' National Association. A dozen associations like the American "national" would really be quite as valuable as none. Messrs. Canadian Flour Makers, study carefully the composition and the conduct of the "national" association in the United States, and then go ye and do—otherwise.

COMPOUND Condensing or Non-Condensing.
16 SIZES, 5 to 500 H. P.
Not yet equaled by any form of Engine for
HIGH FUEL DUTY AND SIMPLICITY.

STANDARD 13 Sizes in Stock.
5 to 250 H. P.
3000 in use in all parts of the Civilized World.

JUNIOR 6 Sizes in Stock,
5 to 50 H. P.
An Automatic Engine cheaper than a Slide Valve.
WELL BUILT. ECONOMICAL. RELIABLE.
Over 300 Sold the First Year.

All the above built strictly to Gauge with
INTERCHANGEABLE PARTS.
REPAIRS CARRIED IN STOCK.
SEND FOR ILLUSTRATED CATALOGUES.

WESTINGHOUSE ENGINES

The Westinghouse Machine Co.
PITTSBURGH, PA. U.S.A.

SELLING DEPARTMENT IN THE UNITED STATES.

New York,	17 Cortlandt St.	Westinghouse, Church, Kerr & Co.
Boston,	Hathaway Building,	
Pittsburgh,	Westinghouse Build'g,	
Chicago,	156, 158 Lake St.	
Philadelphia,	608 Chestnut St. M. R. Muckle, Jr. & Co.	
St. Louis,	302, 304 Washington Av.	Fairbanks & Co.
Kansas City,	312 Union Avenue,	
Denver,	1330 Seventeenth St.	
Omaha,	1619 Capitol Avenue, F. C. Ayer.	
Pine Bluffs, Ark.	Geo. M. Dilley & Sons.	
Salt Lake City,	259 S. Main St.	Utah & Montana Machinery Co.
Butte, Mont.	L. Granite St.	
San Francisco,	21, 23 Fremont Street,	Parke & Lacy Co.
Portland, Or.	33, 35 N. Front St.	Parke & Lacy Mch. Co.
Charlotte, N. C.	36 College St.	The D. A. Tompkins Co.
Atlanta, Ga.	45 S. Prior St.	
Dallas, Tex.	Keating Imp. & Machine Co.	
Chattanooga, Tenn.,	C. E. James & Co.	



CAMERON STEAM PUMP

THE STANDARD OF EXCELLENCE.
SIMPLE! COMPACT! DURABLE!
"NO OUTSIDE VALVE GEAR."


Steam, Air & Vacuum Pumps in Every Variety

FOR ILLUSTRATED CATALOGUE ADDRESS

THE A.S. CAMERON STEAM PUMP WORKS

Foot of East 23d Street, - New York.

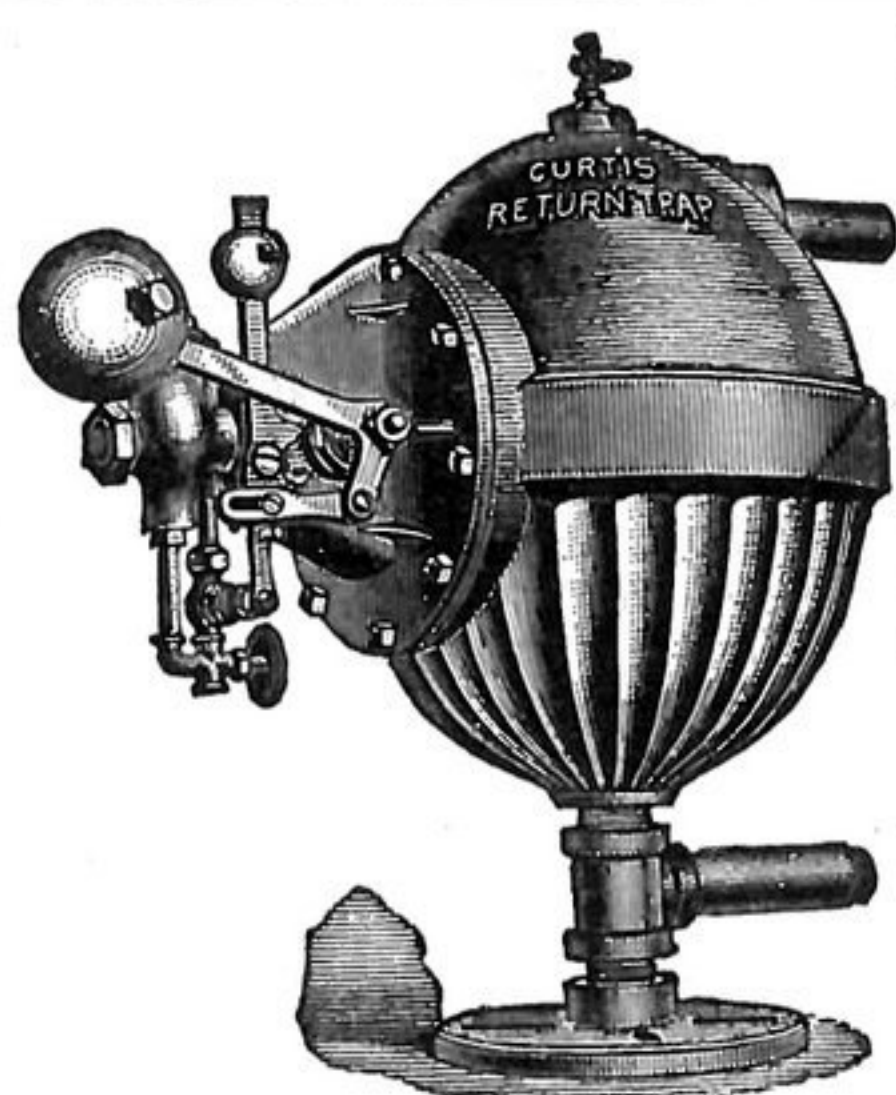
BURNHAM'S NEW IMPROVED



STANDARD TURBINE WHEEL

PATENTED MARCH 27, 1883.
and MAY 1, 1888.

ADDRESS YORK PENN.
for PRICE 8c & 8c.



THE CURTIS

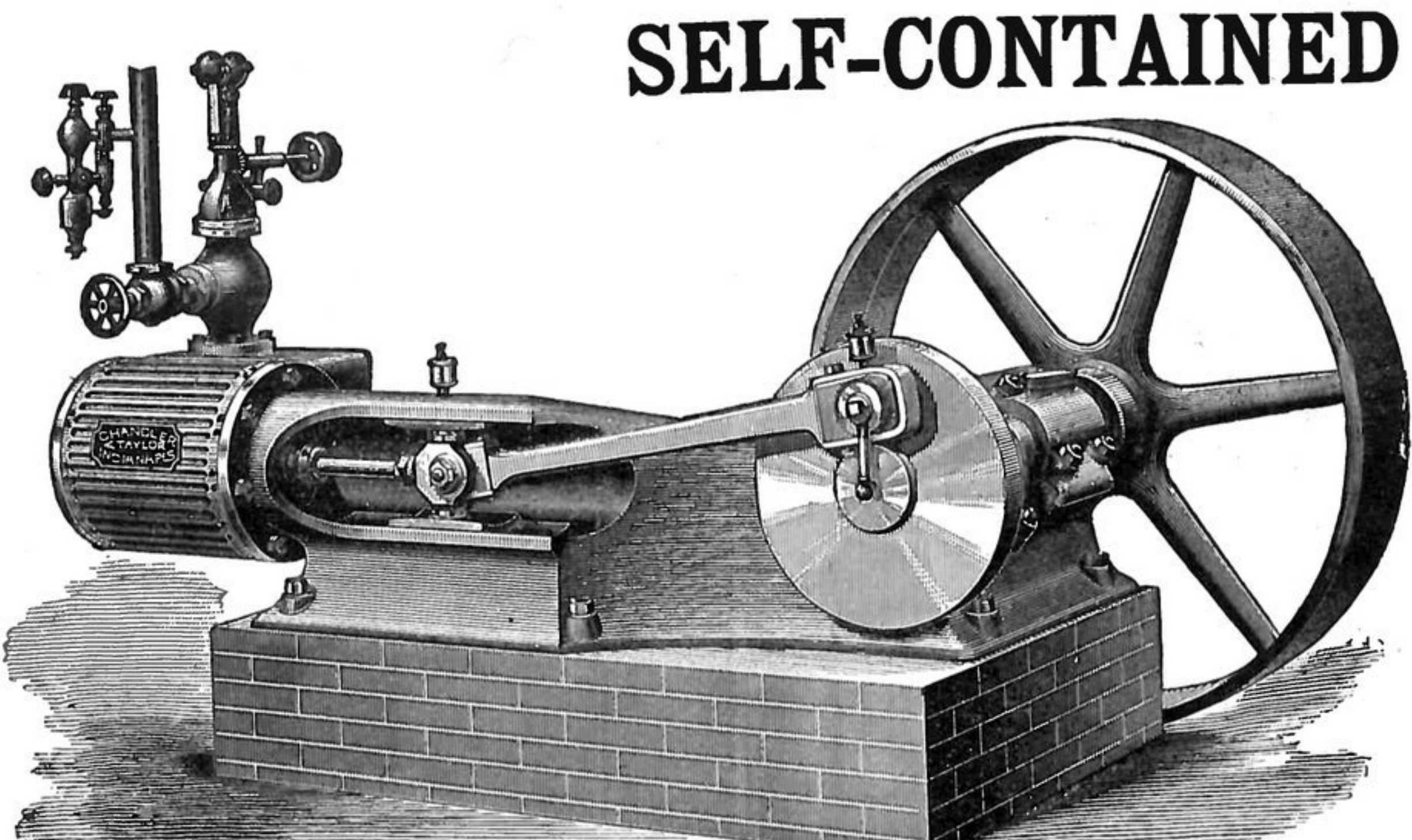
PATENT RETURN STEAM TRAP.

IT is noiseless, positive, rapid, will return all condensation back into the boiler, and works equally well in connection with reduced pressure or exhaust steam, also when the return is below the water line of the boiler.

THE CURTIS REGULATOR COMPANY,
No. 74 BEVERLY ST., BOSTON, MASS.

GENERAL AGENCIES.

NEW YORK, 109 Liberty st.	CHICAGO, 218 Lake st.
PHILADELPHIA, 2035 N. Front st.	ST. LOUIS, 511 WALNUT ST.
MINNEAPOLIS, 210 S. Third st.	NEW ORLEANS, 21 Union st.



SELF-CONTAINED STEAM ENGINES

Stationary or
Semi-Portable.

High Standard Maintained.
Prices Greatly Reduced.

WRITE FOR NEW ILLUSTRATED
CATALOGUE NO. 32.

Chandler & Taylor Co.

Indianapolis, Ind.

Engines, Saw-Mills and Drain Tile
Machinery a Specialty.

NOTES & NEWS

W. R. Bradham, Sumter, S. C., enlarges his corn-mill.
 J. N. Freeman & Co., Berryville, Ark., remodel to rolls.
 W. B. Ector, Irondale, Ala., wants grist-mill machinery.
 Mackin & Long's grist-mill, Rock Camp, W. Va., burned.
 The Farmers' Alliance, Jonesboro, Tenn., start a flour-mill.
 Wm. Smith's flour-mill, Menasha, Wis., burned; loss \$2,000.
 N. A. Allman & Bros., Brownwood, Tex., build an elevator.
 W. S. Holland's flour-mill, Brister, Ark., burned; loss \$5,000.
 K. L. Tanner & Sons, McKinney, Ky., increase flour-mill capacity.
 H. B. Goff's flouring-mill, Fertility, Pa., burned; loss \$32,000; insurance \$22,000.

Carson, Buhl & Goff, Mossy Creek, Tenn., enlarge and improve their flouring-mill.

J. C. Carroll's flour-mill, Adairville, Ky., burned; loss \$20,000; they will at once re-build.

Nicholas & McFall, Port Republic, Va., have remodeled their mill to rolls, with 45-barrel capacity.

Capt. Wright, Morrillton, Ark., has sold his grist-mill to the Little Rock Oil Co., of Little Rock, Ark.

The Alliance Milling & Mfg. Co., Dallas, Tex., sold the Todd Flouring Mills to S. H. Cockrell & Co., the original owners.

J. E. Hatcher, Reba, Va., has formed the Peaks of Otter Milling Co. They want machinery for a 100-barrel flour and corn mill.

The Coffee County Farmer's Alliance, Manchester, Tenn., will build a 40-barrel roller flouring-mill at once. Machinery is wanted.

Geo. F. Shepherd, Statesville, N. C., wants machinery for a new roller mill to turn out 50 barrels of flour and 200 bushels of corn-meal a day.

The Boston and Albany R. R. will light its new depot at Springfield, Mass., with the Edison System, driven by two 65 H. P. Westinghouse Compound Engines, coupled directly to the shafting.

"The distribution of bread, after it is baked," says Edward Atkinson, "now costs the average workman in a city as much as it does to grow the wheat, mill it, barrel it, move it 1,500 miles, and convert it into bread, all put together."

The Omaha and Council Bluffs Railway & Bridge Co. have placed orders for three more Westinghouse Compound Engines of 200 H. P. each, making five in use in this plant. This is regarded as the model electric railway of the Thompson-Houston Co.

The Westinghouse Machine Co. report business in an extremely satisfactory condition. The orders for May aggregated 82 engines footing up to over 4500 H. P., of which 2200 was for compound engines. The demand for the Compound Engine is extraordinary. In the first six days of June their orders amounted to 1000 H. P.

Says the St. Louis Republic of June 27: The first new wheat flour made from the crop of 1889 was, as usual, exhibited on Change to-day by the Geo. P. Plant Milling Co., a sack each of "Sweet Home" patent and "Pilgrim" straight. It was examined by experts and pronounced fully up to an exceptionally high standard.

Among the new uses to which the "Patent Friction Covering" for pulleys, made by the National Pulley Covering Co., of Baltimore, Md., has been put may be mentioned threshing-machines and engines and horse-powers. As this class of machinery is exposed to the weather with no protection for a large portion of the year, a pulley covering which will stand is a most desirable thing to have, and this covering has proved its durability and efficiency in numerous tests.

Says the St. Louis Post-Dispatch of June 25: The first of the 1889 crop of wheat to arrive in this market was received to-day by J. W. Booth & Sons. It was a car load from Dr. T. Blakeslee, of Nedomsha, Kan. The wheat, barring its toughness, which caused it to grade No. 3, was otherwise in fine condition and of excellent quality, speaking well for the

Kansas crop. As usual with first arrivals, this car of new wheat was sold on call at auction and the buyers were the Plant Milling Co., who paid \$1.04 per bushel. This milling concern has been running in St. Louis for nearly fifty years, celebrating their fiftieth anniversary next year, and they have bought, with very few exceptions, the first arrivals of new wheat in this market during all that period.

BOOKS AND PAMPHLETS.

The well-known J. B. Allfree Co., Indianapolis, Ind., have sent out a very neat and comprehensive catalogue of their superior milling-machines and mill supplies. Address them for a copy. It is worth reading.

No. 109 of *Good Housekeeping*, July 6, a midsummer number, presents its usual varied and attractive table of contents, including practical counsel from experienced heads on housekeeping topics and interesting miscellaneous matter. The opening article is the second prize paper on potatoes by Marion Thorne, and it gives a remarkably long list of recipes for preparing potatoes for the table. Another timely paper that will attract much attention is the third of Mrs. Isabella Laning Candee's series on "Amateur entertainments." It describes in detail several novel and taking forms of an entertainment suitable for church or charity fairs and "sociables" in the summer. "One Woman's Summer" is a pleasant sketch by Ruth Armstrong, showing how a little outing and rest may be within the reach of many who think it is not, and who may be mistaken in their apprehension of the way of duty. Some novel recipes from a Cuban kitchen are furnished by Mrs. C. S. Fox. A point of much importance in the matter of canning fruit is made in Mrs. Agnes B. Ormsbee's article on the subject. Dr. A. A. Whitfield gives information and advice in the treatment of scarlatina. There is a generous quantity of good poetry and other matter, and the "Cozy Corner" and other departments are well-filled.

Of the highest importance and interest are the chapters of the *Lincoln Life* in the July *Century*. A thrilling episode is described in Kennan's Siberian paper for the same month. The title is "The Free Command at the Mines of Kara." The *Century's* gallery of Old Masters, on which the leading American engraver is now engaged in Italy, reaches this month the work of Gentile da Fabriano, a part of whose "Adoration of the Kings" forms the frontispiece of the magazine. Travelers in England will find another cathedral article by Mrs. Van Rensselaer, illustrated by Pennell, Winchester being the subject. Frederick Remington, the artist, himself describes his experiences among the Apaches and Comanches; but his rather pessimistic impressions are offset by an "Open Letter" by Mr. Hamilton Wright Mabie. The Far West is also depicted in Mrs. Mary Hallock Foote's eighth picture of her series, this one being entitled "The Last Trip In." An extremely timely contribution is Mr. Charles Barnard's long and profusely illustrated article on the "Advance in Steamboat Decoration." Mr. Barnard surveys the whole subject, West and East, his account culminating in the new Sound steamer, the *Puritan*, the largest ever built of its class. "Woman in Early Ireland" is the illustrated paper in Mr. de Kay's Irish Series. Bishop John F. Hurst in his article, "The Temperance Question in India," gives results of a recent visit to that country. Rev. J. M. Buckley gives many curious instances and much good advice in his article on "Presentiments, Visions and Apparitions." Thomas A. Janvier has a characteristic story, illustrated, entitled "San Antonio of the Gardens." Edward Bellamy prints a story entitled "An Echo of Antietam," and Thomas Wentworth Higginson has one entitled "Nils's Garden." The poems in this number are by William Wilfred Campbell, Edith M. Thomas, Benjamin S. Parker, Thomas Nelson Page, John W. Chadwick, and in "Bric-a-Brac" by Julie M. Lippman, Rose Hawthorne Lathrop, Margaret Vandegrit, Walter Learned, G. Preston and George Birdseye. The "Topics of the Time" are "The Day of Independence," "The Summer Exodus and what It Testifies," and "Outdoor Sports." The "Open Letter" Department is particularly full in this number. Besides Mr. Mabie's paper are several letters brought out by the Life of Lincoln, and others on "Industrial Education for the Negro," the "Secretary of Continental Congress," "Imperial Federation," "One Reason of the Inefficiency of Women's Work," "The Decline of the Editorial," "Confiscation No Remedy" and "General Sheridan and his Troops."



W.A. BINGHAM,
 MANUFACTURER OF
FLOUR SACKS.
 178 Duane Street,
 New York.

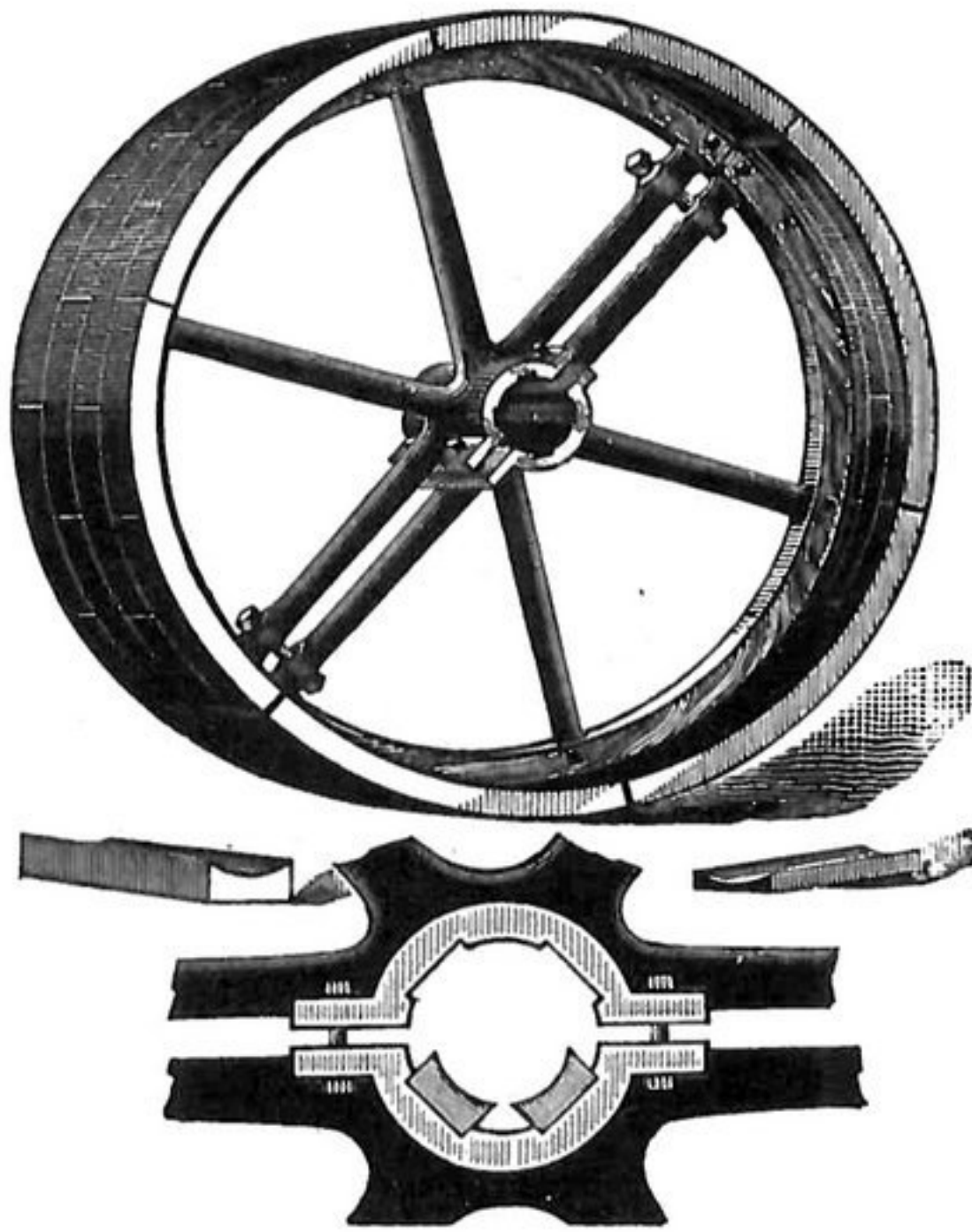


THE BEST ARE THE CHEAPEST.

New York

MILLERS' FLOUR SACKS A SPECIALTY.

THE PATRONAGE of the MILLING TRADE is MOST RESPECTFULLY SOLICITED.



BIRD & CRANE MFG. CO., KALAMAZOO, MICH.

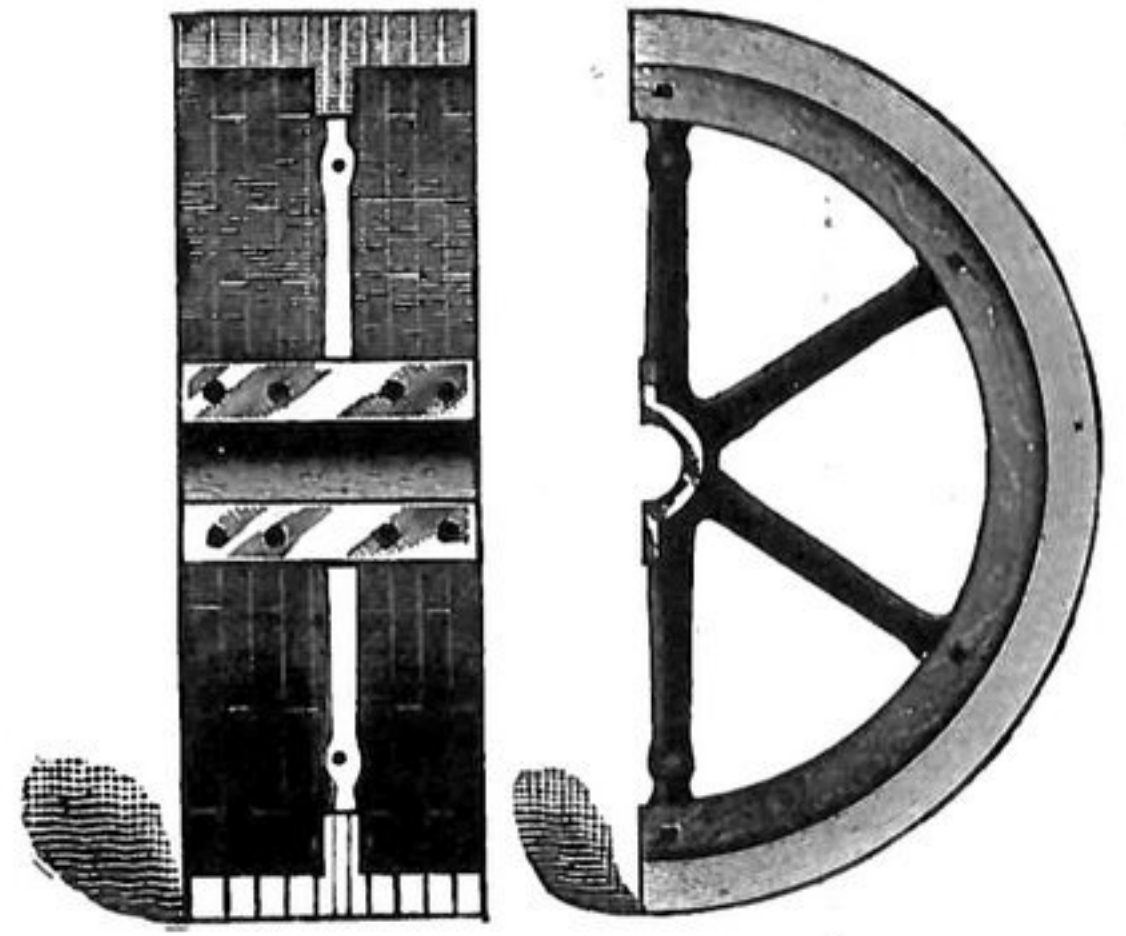
MANUFACTURERS OF PATENT

Wood Split Pulleys

WOOD RIM WITH IRON ARMS.

The Best Pulley on Earth!

Is very easily and quickly adjusted to Shaft. Has Patent Iron Bushings Interchangeable, to Fit Different Diameters of Shafts. Has FOUR or SIX Bearings on Shaft. This fastening never slips. Every Pulley strongly built and perfectly balanced.



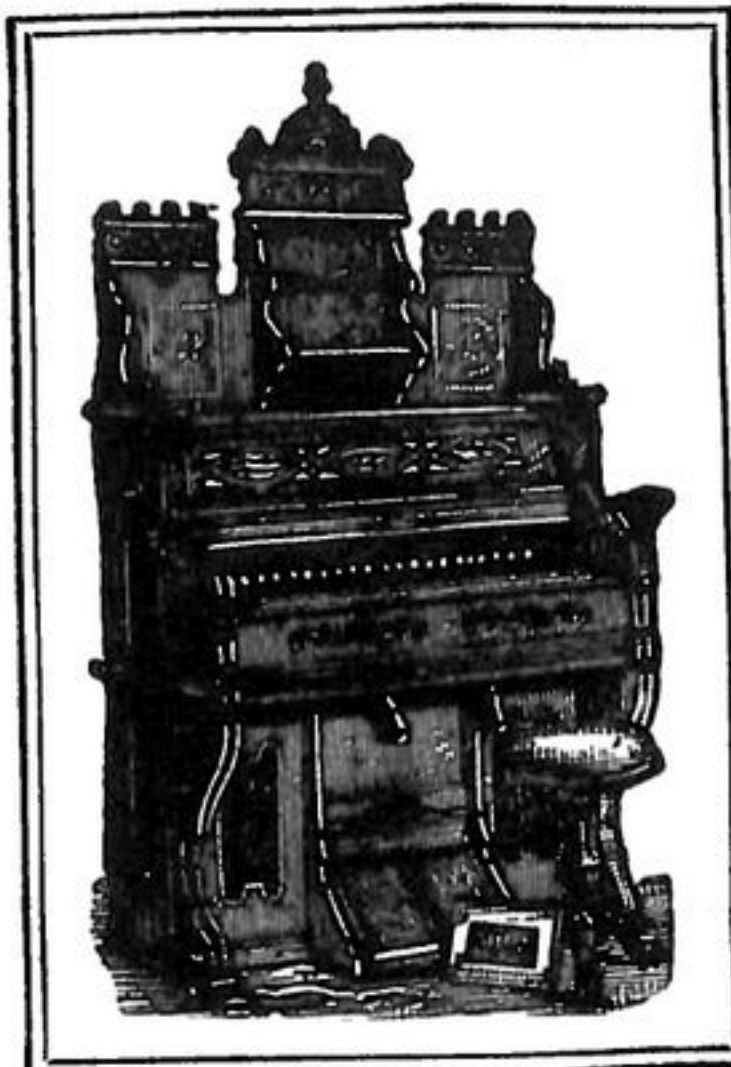
SEND FOR CATALOGUE AND PRICE LIST.

THE LADIES FAVORITE
THE LIGHT RUNNING
NEW HOME
THE SEWING MACHINE THE BEST
THE FINEST WOODWORK ATTACHMENTS
NEW HOME SEWING MACHINE CO. ORANGE-MASS.
CHICAGO, ILL. 28 UNION SQUARE, N.Y. SAN FRANCISCO, CAL.
ATLANTA, GA. ST. LOUIS, MO. FOR SALE BY DALLAS, TEX.

N. BUSSENDORFFER.

SHIPPER'S
CAN SAVE TIME
TROUBLE
AND
CASH
BY USING
BARLOW'S
PATENT
MANIFOLD
SHIPPING
BLANKS. SEND FOR
SAMPLE SHEET & PRICES
BARLOW BROS. GRAND RAPIDS, MICH.

The BEST PIANOS and ORGANS
IN THE WORLD
Are manufactured and sold for the least money by



THE BEST ARE THE CHEAPEST.

Write us for Illustrated Catalogue, Free.

BEETHOVEN
PIANO ORGAN CO.
WASHINGTON, WARREN CO. N.J.
MENTION THIS PAPER.

WOOD ENGRAVING LITHOGRAPHY
THE DONNELL CO.
BOSTON

The Cincinnati Corrugating Co.

ATTENTION MILLWRIGHTS!
A BOOK YOU ALL WANT.
LEFFEL'S
CONSTRUCTION OF MILL DAMS
AND
BOOKWALTER'S
MILLWRIGHT & MECHANIC
A STANDARD WORK.

This practical work of 288 pages gives with full illustrations and complete detail how to build or repair all kinds of mill dams.

PRICE FIFTY CENTS.

Or will be sent with a copy of "THE MILLING WORLD" for one year (postage prepaid) for \$1.25.

—ADDRESS—

McFAUL & NOLAN,
DRAWER 203, BUFFALO, N. Y.

FELTHOUSE & SHERWOOD
Successors to J. J. & Co. MANUFACTURERS
DETROIT, MICH. & G. FELTHOUSE, BUFFALO, N.Y.
IMPROVED BALL BEARING
THE UNION
BLANK OIL CUP
FELTHOUSE'S
THE CELEBRATED
DOUBLE TUBE
UNION INJECTOR
ONE LEVER
PATENT MARBLE TUBE SCREW
AUTOMATIC
ALERT
INJECTOR
COMBINATION PUMP TANK & METER
107 1/2 CHURCH ST. BUFFALO, N.Y.
SEND FOR CATALOGUE MENTION THIS PAPER.

PLEASE mention THE MILLING WORLD when you write to advertisers. It will pay you to do this.

THE JOHN H. MCGOWAN CO.
PUMPS FOR ALL PURPOSES
CINCINNATI, OHIO.
FACTORY OFFICE 46 CENTRAL AVE.
PRICE LIST ON APPLICATION
BRANCH HOUSE, 1425 EAST MAIN STREET, RICHMOND, VA.

EUROPEAN ECHOES.

EUROPEAN markets refuse to respond promptly to the crop reports published daily in the United States.

DURING the nine months ending May 31, 1889, Great Britain imported 14,440,200 quarters, or 115,521,600 bushels, of wheat. Of that total the United States furnished 40,417,696 bushels, or about 35 per cent. Russia furnished 33,613,992 bushels, or about 29 per cent. India furnished 14,126,260 bushels, Germany and Austro-Hungary 13,767,768 bushels, Australia 4,416,344 bushels, Chili 1,639,296 bushels, Argentine Republic 789,584 bushels, and other countries 6,752,768 bushels.

EARLY June brought heavy storms in Germany. A Berlin announcement of June 8 says: Bavaria and other southern parts of the empire report heavy rain-falls, which resulted in inundations and worked considerable damage in displacing railroads. The crops in the field were laid flat or broken, and there was a wholesale uprooting of fruit trees from orchards. In Reichenbach, the industrial center of Saxony, the calamity was the most terrible, every thing standing, the crops in the field included, having been swept away and completely demolished.

IN no other department of agriculture has France made so rapid progress as in that of agricultural implements and machinery, and in no other has she so much to make up. In 1789 France had only 940,000 plows, all in wood, coarse and elementary; harrows and rollers were in keeping; the scythe alike cut grass and corn. All the year round, from 2 to 3 o'clock in the morning, the flail could be heard on the threshing floor. Much of the corn was carried to the stock-yard on the backs of horses and mules, and the manure was conveyed to the fields in the same primitive fashion. In 1862 France possessed 2,500,000 plows, of which one-fourth were of an improved pattern. At present there are 3,000,000 plows, and nearly all modern. In 1882 there were 200,000 horse-hoes in France, or eight times more than in 1862. The invention of the threshing-machine dates from the commencement of the nineteenth century; yet France had only 60,000 of these machines in 1852; at present she has 215,000. She had only 1,527 steam-engines, fixed and portable, employed on farms in 1852; thirty years later the number had risen to 9,300. Respecting hay-making machines and reapers, France had none at all in 1852; at present she has 27,000 horse hay-rakes and 36,000 reaping-machines. France wants 800,000 horse-hoes, 300,000 sowing-machines and a like number of reapers, and hay horse-rakes. To supply this vast deficiency the duty rests upon, first, the large landed proprietors, and next, on the mean-sized and small farm holders working by co-operative efforts. Here is a singular fact. In 1879 France imported agricultural implements and machinery, chiefly from England and the United States, for over 7,000,000 francs. She exported similar goods to the extent of 2,000,000 francs. In 1888 her total imports of agricultural machinery amounted to over 2,225,000 francs, while exports under the same head

remained stationary. Attention has been drawn from time to time to the progress France is making in agricultural machinery. That machinery is neither so well made nor finished as the products of England and America, and its augmented sale is due to a longer system of credit that agricultural syndicates can obtain from local bankers.

MILLING PATENTS.

Among the patents granted June 25, 1889, are the following:

Henry Applen, Saratoga, Ill., No. 405,689, a rotating grain-meter.

John H. Forsyth, Fargo, Dak., No. 405,728, an automatic grain-scale.

Friedrich Wegmann, Zurich, Switzerland, No. 405,810, a hulling or grinding machine, and No. 405,811, a method of grinding, scouring, cleaning or decorticating grain or any similar material, which consists in subjecting a mass of such material while in contact with an abrading-surface simultaneously to the action of two centrifugal forces generated in opposite directions from different centers, whereby said mass is held in contact with the abrading-surface and the particles thereof shifted relatively to each other.

Lee Elliott, Stuart, Ia., No. 405,833, a grain-meter.

Chas. L. Heisler, Dunkirk, N. Y., No. 405,838, a corn-sheller.

Geo. L. Jarrett, Des Moines, Ia., No. 405,841, an adjustable automatic conveyer and bolting-reel.

Eugene Bretney, Indianapolis, Ind., No. 405,869 a dust-collector.

Wilson Ager, Bloomsburg, Pa., No. 405,937, a grain-scourer.

James E. Welch, Petersburg, Ill., No. 405,973, a bolting-reel.

Chas. Espenschied, Hastings, Minn., No. 405,994, a conveyor for flour.

CORN MORE VALUABLE THAN MEN.

Chinamen in some provinces seem to think an ear of corn is worth more than a Chinaman. A report from the governor of Yunnan shows the barbarism that still lingers in some of the country districts of that province. The villagers have a horrible custom of burning to death any man caught stealing corn or fruit in the fields. A man named Peng Chao Sheng was going down to watch his own field, and on his way he plucked an ear of corn from a neighbor's patch of maize. He was seized and brought before the village assembly, which decided that he must be burnt to death, though his mother tried to ransom him by the offer of her whole property. The unfortunate man was burned alive, his own mother being compelled to set fire to the fagots so as to prevent her from lodging a complaint afterward, which turned out an unsuccessful precaution. Of the two ring-leaders in the outrage, one has died in prison, and the other has been decapitated. The incident shows the excessive poverty in which the people in some portions of China must live, for it would be impossible that such a custom should exist except in a country where every ear of corn was as valuable as a man's life.

The Canton Cabinet Filing Case Company, Canton, Ohio

MANUFACTURERS OF

The New Buckeye Document Case & Letter File; Also All Kinds Office Furniture



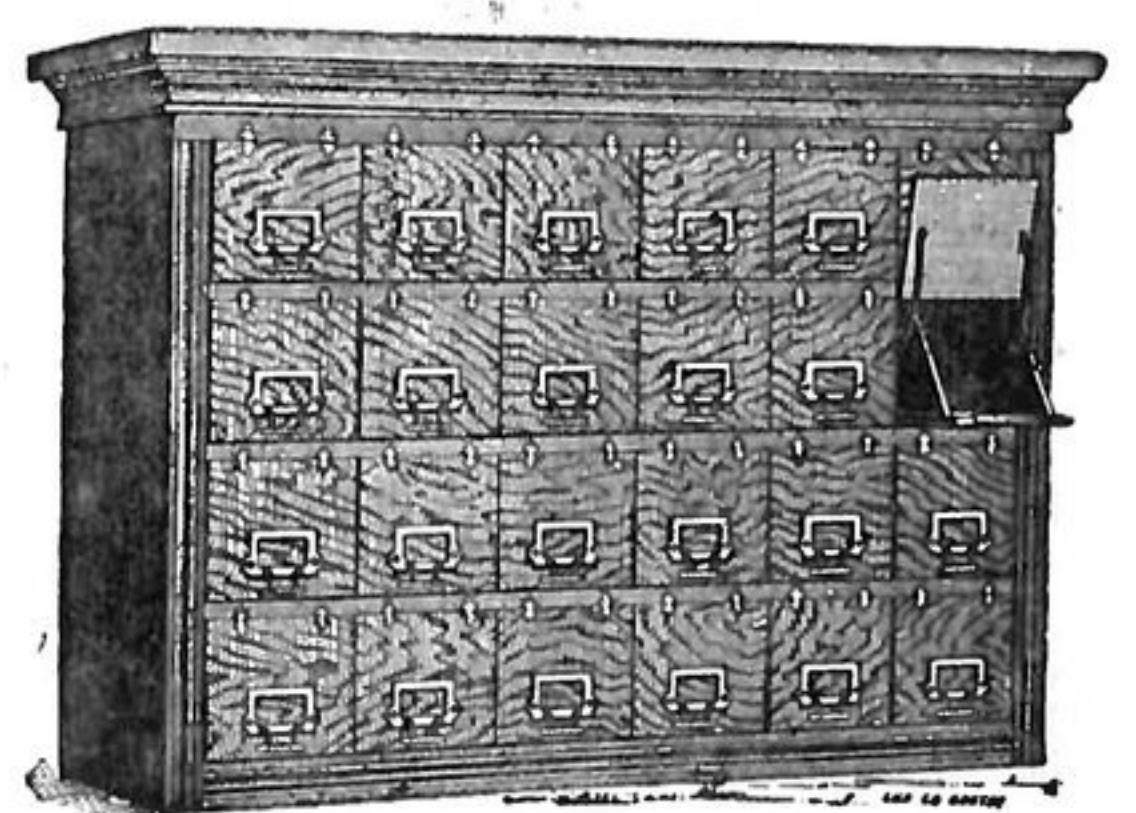
NO. 8.

NO. 8 Represents one side of one of our Revolving Cabinet Letter Files and Document Cases Combined. It contains 30 Document Drawers and 8 Letter File Drawers. In filing letters we use first VOWEL of name on front of drawer, and LETTER FOLLOWING first VOWEL on Index Sheet within drawer. We also make more exhaustive systems which contain from 6 to 100 or more Filing Drawers.

NO. 1 Represents one of our small Document Cabinets, for use on desks or brackets. Action of drawer can be seen in the cut. When front is raised inner drawer comes forward, exposing contents of drawer for inspection.

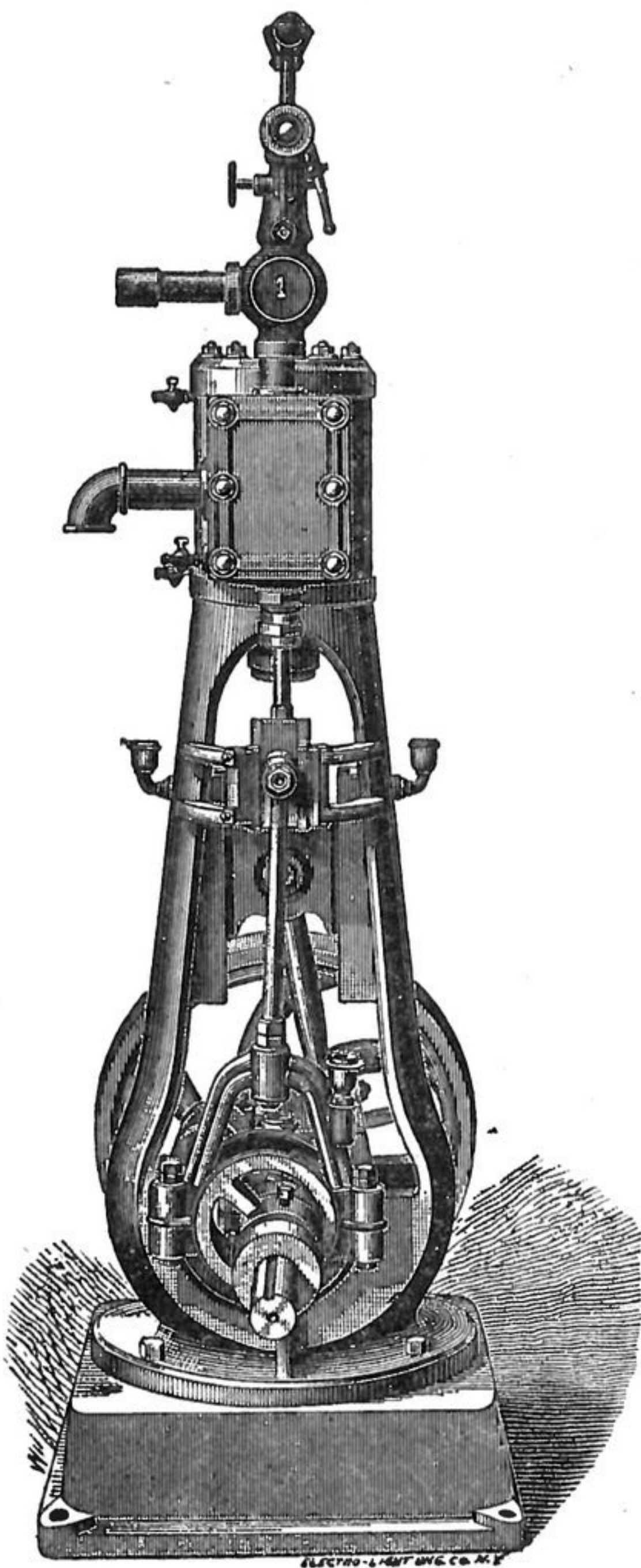
Our Cabinet Files are Unexcelled to be the Most Convenient of Any in the Market. They are Compact, Simple, Complete, Durable and Ornamental.

SEND FOR PRICE LIST AND CATALOGUE.



NO. 1.

AUTOMATIC VERTICAL ENGINES



Especially adapted for Small Electric Light Plants. Perfect Regulation. Reversible Link Motion for Marine Use. Five to Fifteen Horse Power. Also manufacturers of

Lathes and Special Tools

Metal Patterns, Models and Machinery Built to Order. Send for Prices and Specifications.

Lloyd & Sterrett

COR. 16TH AND STATE STS.,
ERIE, - - PENN.



**MOORE'S
PATENT
BARREL HEATER.**

For all kinds of cooperage. Thousands in use in all parts of the U. S. Send for Circular.

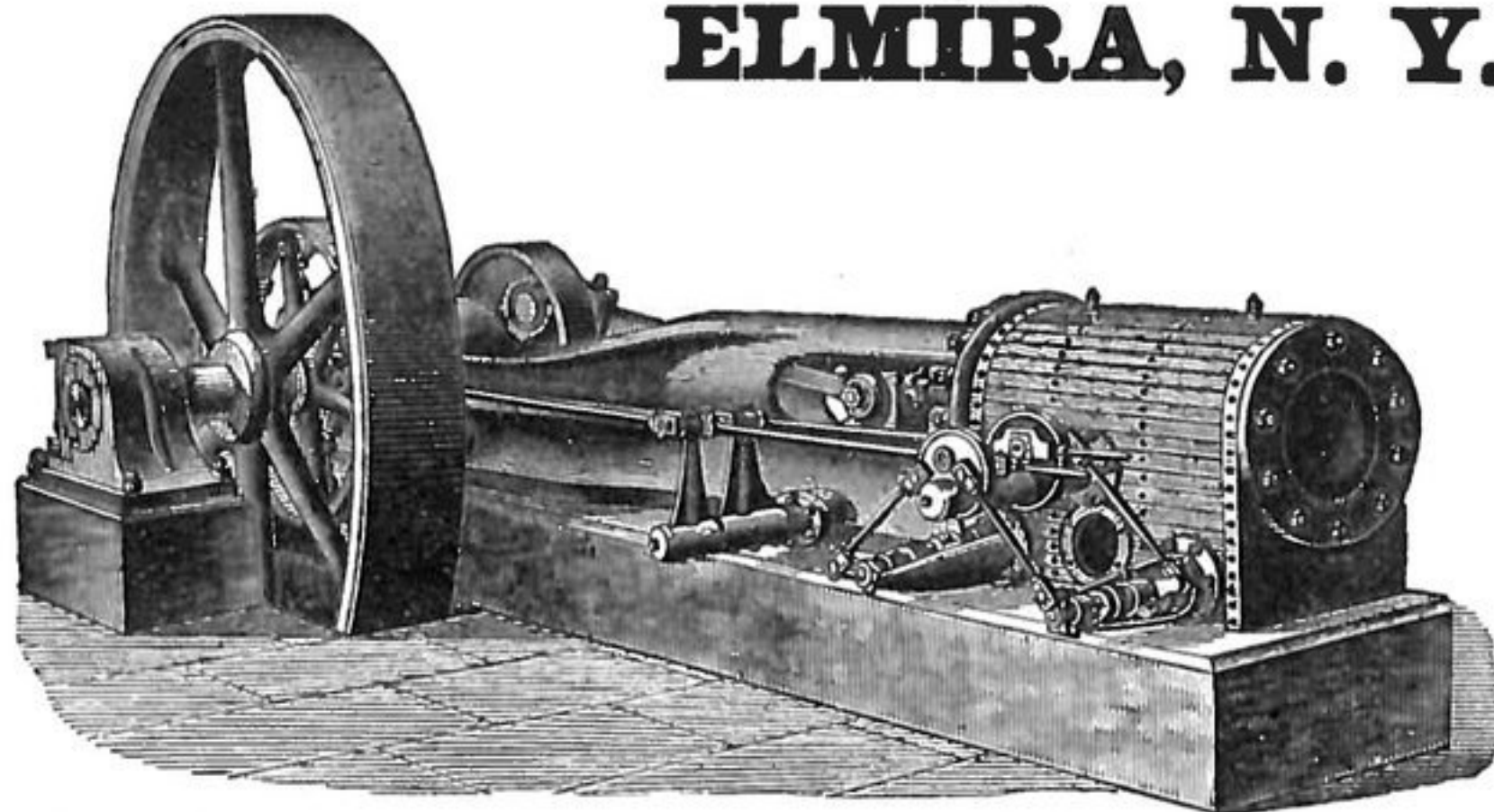
JOLIET STOVE WORKS. JOLIET ILL.

PAYNE HIGH SPEED CORLISS ENGINE

SHAFT GOVERNOR COMBINED WITH CORLISS WRIST-PLATE.
ECONOMY OF FUEL.

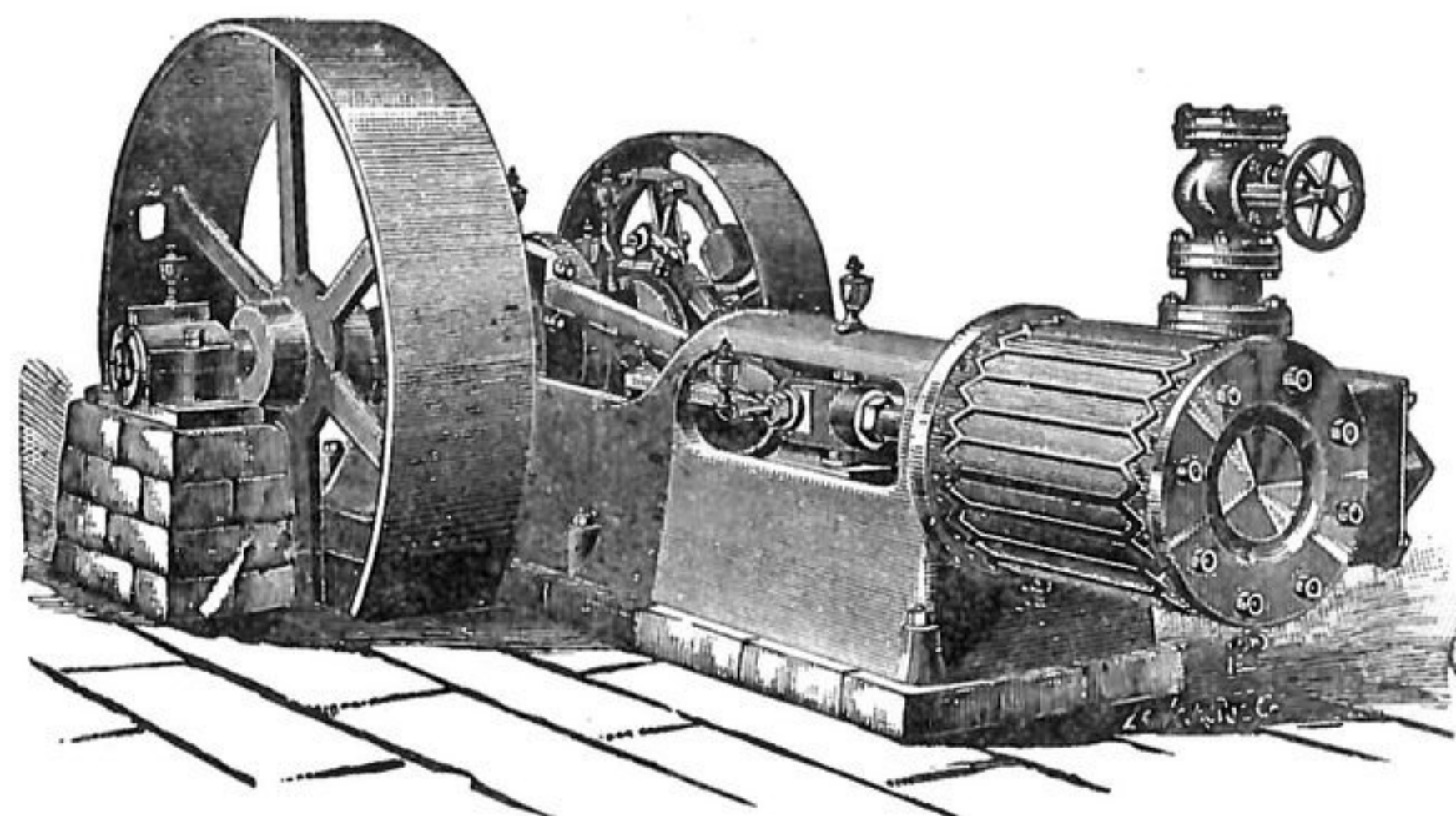
REGULATION EQUAL TO ANYTHING IN USE.

B. W. Payne & Sons,
ELMIRA, N. Y.



10 S. Canal Street,
CHICAGO, ILL.
45 Dey Street,
NEW YORK.
Hill, Clark & Co.
BOSTON, MASS.

AUTOMATIC ENGINES FROM 2 TO 200 HORSE POWER.
Economic Power Plants



Especially Adapted to Electric Lighting and
WOOD-WORKING ESTABLISHMENTS

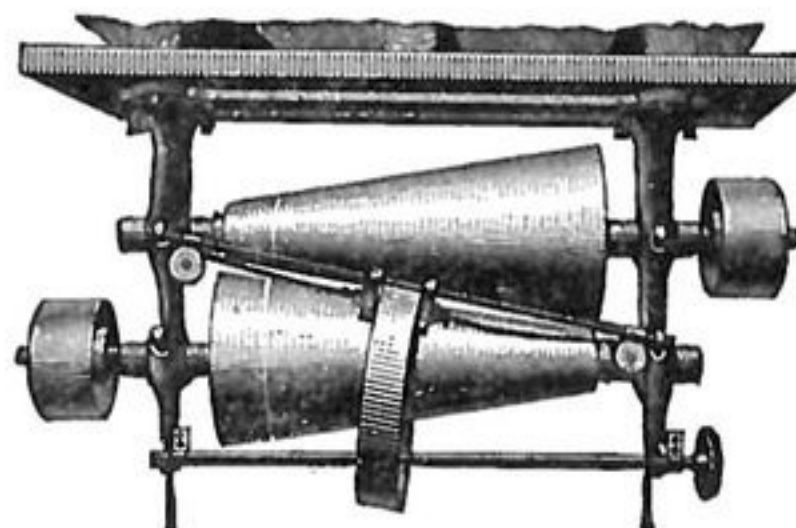
MANUFACTURED BY

VALLEY IRON WORKS, WILLIAMSPORT, PENN.

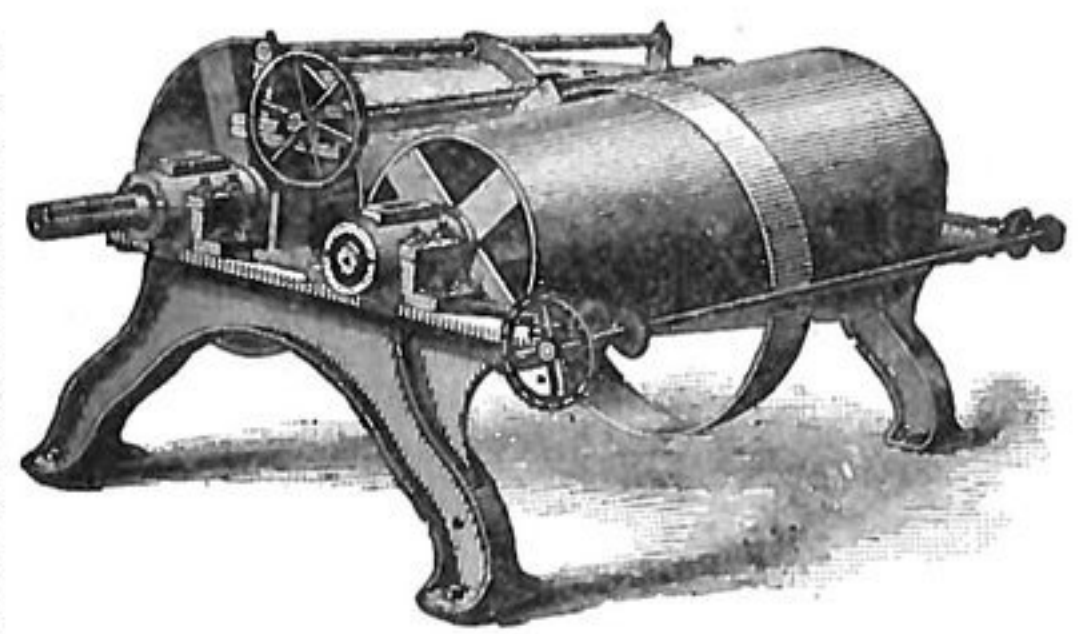
Please Send for Our New Catalogue and Mention "The Milling World."

THE EVANS FRICTION CONE & FRICTIONAL GEARING

"PATENTED."



This cut represents a set of hanging cone pulleys. This pattern is intended for that class of machinery that stops and starts at the same speed, and at the same time be able to change the speed more or less while running. These cones are also fitted with a governor where a steady motion is required and the initial power is



fluctuating. All sizes made from 1/2 Horse Power to 50 Horse Power. **SEND FOR ILLUSTRATED CATALOGUE.**

EVANS FRICTION CONE CO., 85 Water St., BOSTON.



KEEP YOUR BELTS FROM SLIPPING

And Save Your Power by Using FRICTION COVERING for Pulleys. Agents Wanted. Satisfaction Guaranteed- Easily Applied. No Rivets. Effective.

NATIONAL PULLEY COVERING CO., BALTIMORE, MD.



OFFICE OF THE MILLING WORLD,
BUFFALO, N. Y., July 6, 1889.

Friday of last week brought stronger cables, reports of hot and damaging winds in Dakota and less favorable reports from Russia, all resulting in making wheat stronger. June wheat closed at 86½c. Options 9,000,000 bushels. June corn closed at 41½c. and oats at 28½c. Wheat flour was firm on the better grades of of springs. Millers sent higher limits on spring flours. Pillsbury patents were quoted as high as \$6.25. The minor lines were unchanged.

Saturday brought continued reports of hot winds in Dakota and firmer cables, under which July wheat closed at 86½c. Options 1,860,000 bushels. July corn closed at 41½c. and oats at 28½c. Wheat flour was strong and unchanged. Transactions were small. All the minor lines were quiet and featureless.

Monday brought conflicting weather reports and weaker cables, and the markets were active, unsettled and irregular. July wheat opened at 86c. and closed 85½c. Options 9,000,000 bushels. Exporters did nothing. July corn closed at 41½c. and oats at 28½c. None of the minor lines showed much change. Wheat flour was dull and irregular, with European exporters' limits 10c. below New York. Fancy brands of Minnesota patents were advanced to \$6.25@6.35, on reports of serious damage to the spring crop, ranging from 25 to 50 per cent., on the continued hot, dry winds and the bulling of the old crop Minneapolis bulls in wheat and flour, who are said to have combined to put up the stock of old spring wheat patents, which they still hold in large quantities, in order to reduce their losses. The New York stocks of flour on July 1 included 132,875 barrels, of which 66,075 barrels were spring and 66,800 were winter, against 160,275 barrels on June 1, and 156,326 barrels a year ago. The visible supply in the United States and Canada was:

	1889.	1888.	1887.
	June 29.	June 30.	July 2.
Wheat.....	15,300,715	23,623,989	34,413,127
Corn.....	9,490,334	11,308,521	10,179,670
Oats.....	5,250,113	4,838,172	2,780,933
Rye.....	916,765	193,252	220,910
Barley.....	281,057	159,674	135,428

Tuesday brought reports of rain where it was greatly needed in the northwest, and wheat went off, while corn advanced on reports of free and general demand, on light spot supplies and on reports of serious damage to the crop by heavy and long continued rains in Illinois. July wheat closed at 85½c. Options 7,240,000 bushels. July corn closed at 42½c. Options 1,120,000 bushels. July oats closed at 28½c. Wheat flour was firm, with increased home inquiry, and with holders asking late advanced limits on patent springs of fancy brands, and with buyers and sellers 10@15c. apart. Trade was moderate. The minor lines were quiet.

Wednesday brought a quiet day for the speculators. There were conflicting crop reports, followed by irregularity and weakness. July wheat closed at 85½c. Options 3,240,000 bushels. July corn closed at 42½c. and oats at 28½c. Rye was dull and nominal, and barley slow. Wheat flour was moderately active, and there was a fair export demand for the West Indies and South America. Following are the quotations:

	SPRING FLOUR.	
	Sacks.	Barrels.
No grade.....	\$1.70@1.85	\$....@....
Fine.....	2.10@2.15	2.25@2.50
Superfine.....	2.30@2.60	2.70@3.10
Extra No. 2.....	2.90@3.20	3.10@3.35
Extra No. 1.....	3.40@3.75	3.60@4.25
Clear.....	3.45@3.75	3.75@4.00
Straight.....	4.45@5.00	4.50@5.25
Patent.....	5.35@5.70	5.20@6.10

	WINTER FLOUR.	
	Sacks.	Barrels.
No grade.....	\$1.80@2.00	\$....@....
Fine.....	2.20@2.50	2.35@2.60
Superfine.....	2.60@3.10	2.90@3.15
Extra No. 2.....	3.20@3.50	3.45@3.60
Extra No. 1.....	3.60@4.25	3.80@4.80
Clear.....	3.75@4.10	4.00@4.55
Straight.....	4.25@4.60	4.50@4.80
Patent.....	4.50@4.75	5.10@5.50

	CITY MILLS.	
	Sacks.	Barrels.
W. I grades.....	\$4.35@4.50	
Low grades.....	2.35@2.65	
Patents.....	5.00@6.00	

Rye flour was moderately active and firm at \$2.05@2.90 for superfine, and \$3.05@3.15 for fancy. Corn-meal was quiet and steady at \$2.45@2.75 for yellow western and \$2.75 for Brandywine. Mill-feed was quoted as follows: 40-lb. 55@60c.; 60-lb. 55c.; 80-lb. 60c.; 100-lb. 70@80c.; sharps 80@85c.; rye feed 65@70c.

BUFFALO MARKETS.

WHEAT—No. 1 hard wheat was in fair demand today, but there was no spot wheat and no sale in that grade was made. New No. 1 hard at the close was quoted at \$1.02½ to arrive; old do do at \$1.23½; Northern wheat was in fair demand, 8,090 bu. No. 2 changing hands at 85½c, and 2,000 do do at 85c; 97c was asked for No. 1 early in the day, but could find no buyers at that price; No. 3 was quoted at 76c. The highest price paid for Chicago July wheat was 80½c; lowest, 79½c; highest December, 80½c, and the lowest 79½c. Winter wheat, there was a fair demand for choice Michigan, but there was none on the market; No. 2 red Chicago 89c. do Toledo 92@93c; the only sale made was 4 carloads No. 3 red at 80c; No. 1 white Oregon was quoted at 86c in store. **CORN**—Quiet but steady; No. 2 yellow was quoted at 39½c; No. 3 do at 39c; No. 2 corn at 39½c; No. 3 do 39½c; latter sales made of 10 carloads No. 3 corn at 38½c, and 12 carloads No. 2 yellow at 38½@38¾c. **OATS**—In fair demand but light supply and market strong; No. 2 white 30½@33c. on track; No. 3 white 30½c; No. 2 mixed 26½c in store. White State oats from farmers' wagons 34@35. **CANAL FREIGHTS**—Firm. Rates of freight on wheat to New York 3¼c on corn 3¼c, on oats 2¼c, and on rye, 3¼c; lumber rates to New York \$2.25, to Albany \$1.75. **RYE**—Dull at 47½@48c for No. 2 Western. **LOUR**—City ground—Patent spring \$6.25@6.50 straight Duluth spring, \$5.75@6.00; bakers' spring, best, \$5.50@5.75; do rye mixture, \$4.75@5.00; patent winter, \$6.00@6.25; straight winter, \$5.00@5.25; clear winter \$4.75@5.00; cracker, \$4.75@5.00; graham \$4.75@5.00; low grade, \$3.09@4.00; rye, \$3.25@3.50 per bbl. **OATMEAL**—Akron, \$6.00; Western \$5.75 per bbl; rolled oats, in cases, 72 lbs \$3.25. **CORNMEAL**—Coarse, 80@85c; fine, 85@90c; granulated, \$1.50 per cwt.

A report from St. Paul, Minn., dated June 30, says: Crop prospects are less favorable than they were a week ago, owing to the lack of moisture and the hot dry winds that have held sway across portions of North Dakota in the last few days. A dispatch from Bismarck says the crop on the Missouri Slope, where the prospects have been more favorable than anywhere else in the Northwest, is in great danger, and that another day of the heat will leave that region with half a crop as a good average. The crop conditions were excellent until last week. McLean and Kidder counties are not likely to harvest more than half a crop. Burleigh will be satisfied with 70 per cent and the crops in Emmons County will be short. Advices from Jamestown, Dak., are of a similar discouraging import. The mercury stood at 98 degrees in the shade in that city yesterday, and a hot wind blew all day, greatly damaging the crop prospects. The crop throughout the Jim River Valley looks unfavorable. Advices received from all parts of the Northwest indicate that there will be considerably less than an average yield of wheat. Oliver Dalrymple, the most extensive bonanza farmer of Dakota and a wheat expert of National reputation says: "The stand is generally thin and the straw short. The stools are all gone. I have been over Cass and Trail counties pretty thoroughly and am of the opinion that we are not going to have over 50 per cent. of a crop. If conditions should be everything that could be desired from now until harvest time we might get a crop equal to that of last year. The great trouble has been the lack of moisture in the ground from snows and frosts. If there had been the usual amount of moisture in season, we could pull through the hot spell, but as it is, 50 per cent. of the crop is irreparably damaged. I think the spring wheat crop of the United States will not exceed 150,000,000 bushels, from the present outlook." An-

other report on the same date says: Reports from Griggs and Cass counties in Dakota and adjacent Red River valleys in Minnesota are to the effect that good rains fell yesterday, and the farmers are hopeful that at least some of the damage by the hot, dry weather will be overcome.

Says the New York Produce Exchange Reporter of June 29: The country has reached that period in its crop history when we ought to have some general idea of the final outcome of the winter and spring seeded crops. We have had a season of great extremes. It opened under such favorable circumstances for the putting in of the crops and continued with these favorable surroundings so long that we were all led to believe that we should have a most bounteous yield of grain of all kinds. We have lacked all through the season an average amount of sunshine and have had but one week of good warm, growing weather, and that was early in May. June closes with a backward condition of all crops. The winter wheat harvest has begun, but is confined to Texas, Tennessee, and Kentucky, Southern Kansas and Missouri, where the weather has been more or less wet and the crop has been secured at great disadvantage. The grade of wheat is generally reported to be excellent. The harvest line has advanced through southern Illinois, southern Indiana and Ohio. The Michigan wheat crop, which is always a very important one, will not be harvested for two weeks yet. At present we have not seen any thing which indicates a crop in quantity much different from last year. Its quality will depend on the weather of the next twenty days. Rains in the winter wheat belt during the last fourteen days have been excessive, and the tendency still is to wet weather. It is said that if farmers can realize 70 cents for their wheat it will move very freely, but below this figure no one will sell unless compelled to. The reserves of old wheat in farmers' hands are much lower than at this time last year. The spring wheat crop of Minnesota and Dakota have received a scorch from the drouth which the rains can scarcely efface, and the general prospects of the crop are not above those of last year.

An effort is being made by parties in the province of Manitoba to organize and secure a charter for a warehousing company, which will devote its efforts entirely to the receiving and storing of grain at points throughout Manitoba and the northwest. A prospectus has been drawn up, setting forth the aims of the proposed company, and to this prospectus have been attached the names of all the bank managers of Winnipeg in a certificate as to the necessity for and probability of success of such a company if chartered and working.

According to Anglo-Saxon scholars the term "lady" is derived from a word which meant "loaf-giver." In Anglo-Saxon days, and long after, it was customary for the wife of the lord to give away bread to her husband's vassals with her own hands; she was, in fact, a kind of relieving officer. In time the distribution of the loaves was entrusted to menials, but the title "lady" was retained by the mistress of the household.

"Cooper on Belting"

A Treatise on the Use of Belting for the Transmission of Power. With illustrations of approved and actual methods of arranging Main Driving and Quarter Twist Belts, and of Belt Fastenings. Examples and Rules in great number for exhibiting and calculating the size and driving power of belts. Plain, Particular and Practical Directions for the Treatment, Care and Management of Belts. Descriptions of many varieties of Beltings, together with chapters on the Transmission of Power by Ropes; by Iron and Wood Frictional Gearing; on the Strength of Belting Leather; and on the Experimental Investigations of Morin, Briggs, and others, for determining the Friction of Belts under different tensions, which are presented clearly and fully, with the text and tables unabridged. By JOHN H. COOPER, M. E. Second Edition. One vol., demi octavo. Cloth, \$3.50. Sent post-paid on receipt of price. Address,

McFAUL & NOLAN, BUFFALO, N. Y.



RELIANCE OIL & GREASE CO., CLEVELAND, O.,

—MANUFACTURERS OF—

Finest Lubricants for Milling Plants. A Challenge to the World.

WRITE US.

"VALVE OLEINE"—675 Degrees Fire Test, Cylinder Oil.

"CHIEF"—Roller Mill Lubricant.

"NIAGARA"—Belt Grease.

"RUSSIAN"—Engine and Machine Oil.

"ANCHOR"—Roller Mill Grease.

"CHELSEA"—Scale Solvent, Best on Market.

Agents Wanted.

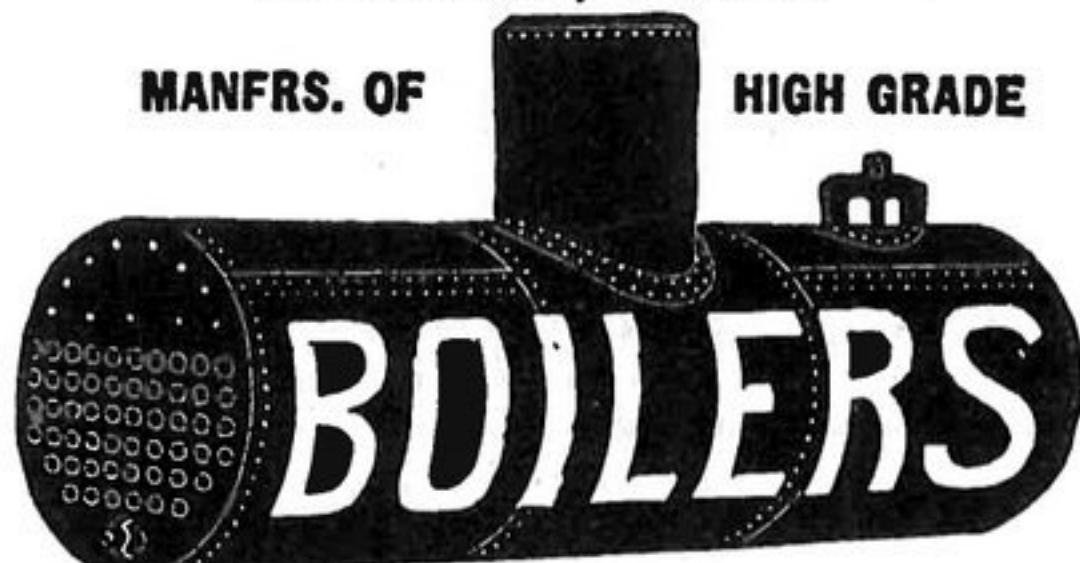
FREE—SAMPLES, CATALOGUE, AND ALL INFORMATION.

SPECIAL
HIGH GRADE
PRODUCTS

**EAGLE IRON WORKS,
DETROIT, MICH.**

MANFRS. OF

HIGH GRADE



**HORIZONTAL, UPRIGHT
PORTABLE AND MARINE.**

Oil Tanks & Smoke Stacks,

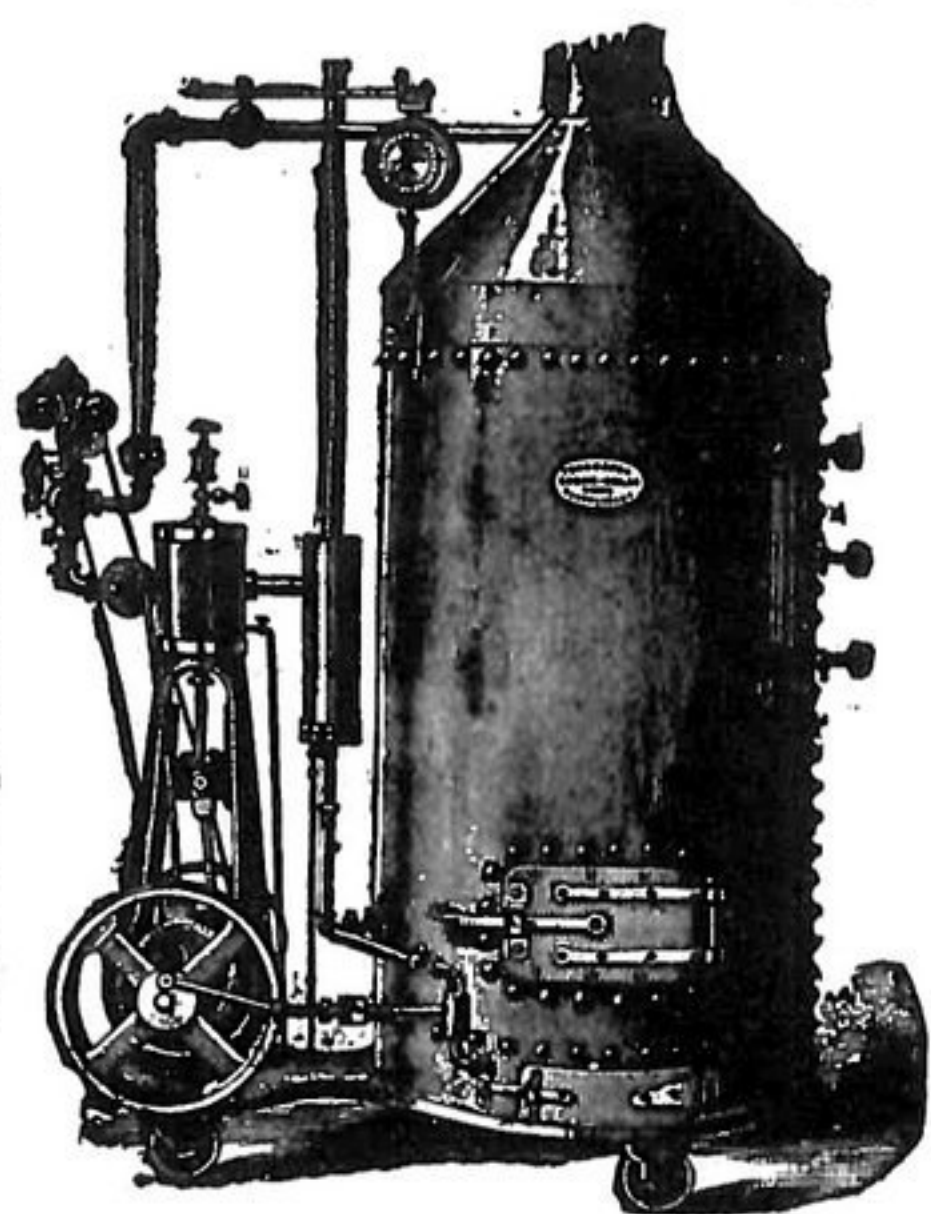
HEAVY SHEET IRON WORK.

CORRESPONDENCE SOLICITED.

**TONAWANDA
ENGINE AND BOILER WORKS**

A Large Assortment of Machinery.

The Best 6-Horse Power Semi-Portable Upright Engine and Boiler Made.



SPECIAL PRICE. GUARANTEED.

SEND FOR CATALOGUE.

ARMITAGE, HERSCHELL & CO.

Tonawanda N. Y.

New Improved Patent Head Linings.



DESCRIPTION.

These Linings are curved edgewise and flatwise, besides having the edge beveled, so as to make them fit the head and chine PERFECTLY, without springing them edgewise when nailing.

If you use them once you will have NO OTHER. No need of pounding fingers, as the ends do not have to be held down while nailing. They are much more convenient to nail and look better than any other. They are first tied in bundles of two hundred, and, when dry, are put into bales, weighing about fifty pounds each, and tied with two strong wires, to make them handle better and to prevent loosening out in transit.

Write for prices and state about the number you use per year.

To convince you of their merit, and for the purpose of introducing them, I will ship a sample order of from five to ten thousand at a REDUCED RATE.

SEND US A TRIAL ORDER: SATISFACTION GUARANTEED.

J. H. PETERS,
Owner of Patent and Manufacturer,
COLEMAN, MICH.

**L. L. WHITLOCK,
Advertising Agent**

FOR MANUFACTURERS.

TRADE JOURNALS A SPECIALTY.

P. O. DRAWER 5323. Boston, Mass.

As Agent for Advertisers instead of Papers, I obtain the Best Rates Possible for my Customers.

*** THE INK ***
WITH WHICH THIS PAPER IS PRINTED
IS MADE BY THE
QUEEN CITY PRINTING INK CO.
CINCINNATI, O.

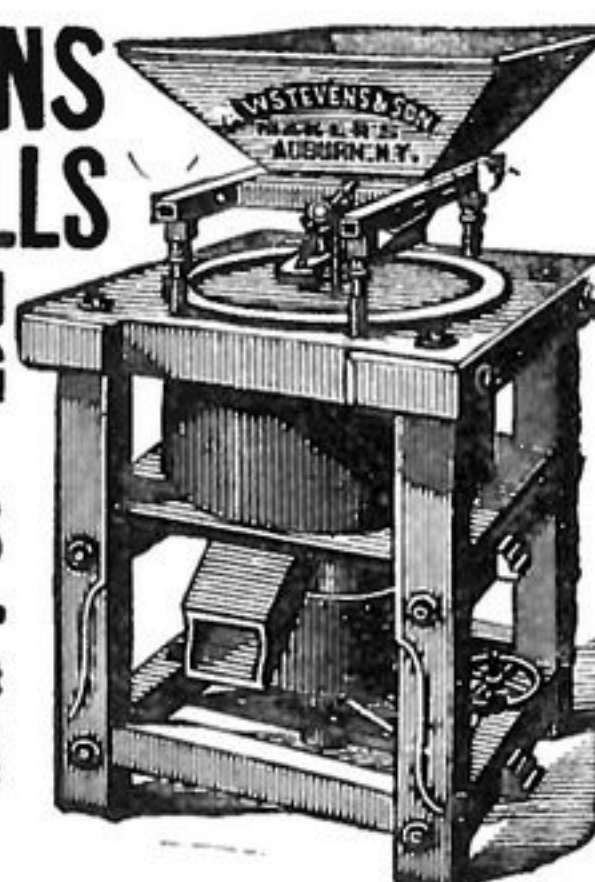
**THE STEVENS
PORTABLE MILLS**

For CORN and
FEED GRINDING

Genuine French
BUHR STONES
Power Corn Sheller
Prices Below the Lowest

A.W. STEVENS & SON
AUBURN, N. Y.

Mention this paper.



THIS WHEEL GIVES HIGH RESULTS, AND IS ACKNOWLEDGED THE BEST, MOST PRACTICAL AND EFFICIENT TURBINE MADE. FOR SIMPLICITY, DURABILITY, AND TIGHTNESS OF GATE IT HAS NO EQUAL.

State requirements and send for Catalogue to

T. C. ALCOTT & SON,
MOUNT HOLLY, N. J.

The LIPPOLD DUSTLESS CORN SHELLER & CLEANER

MANUFACTURED BY

The LIPPOLD MFG. CO.

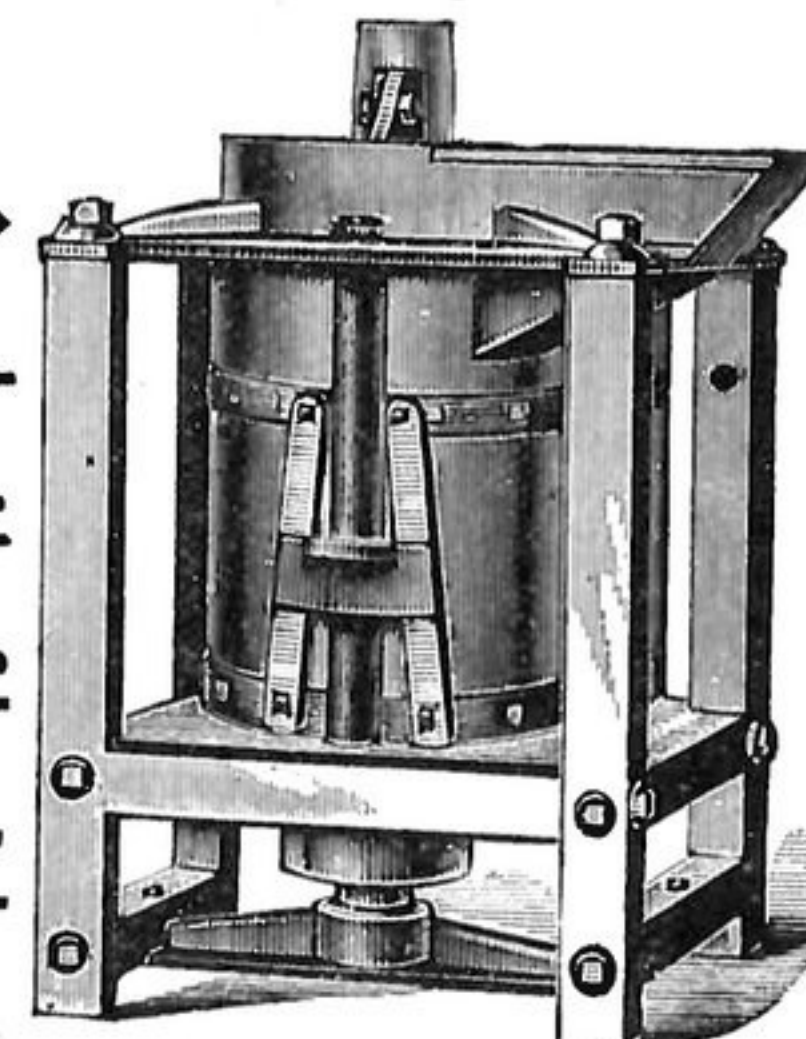
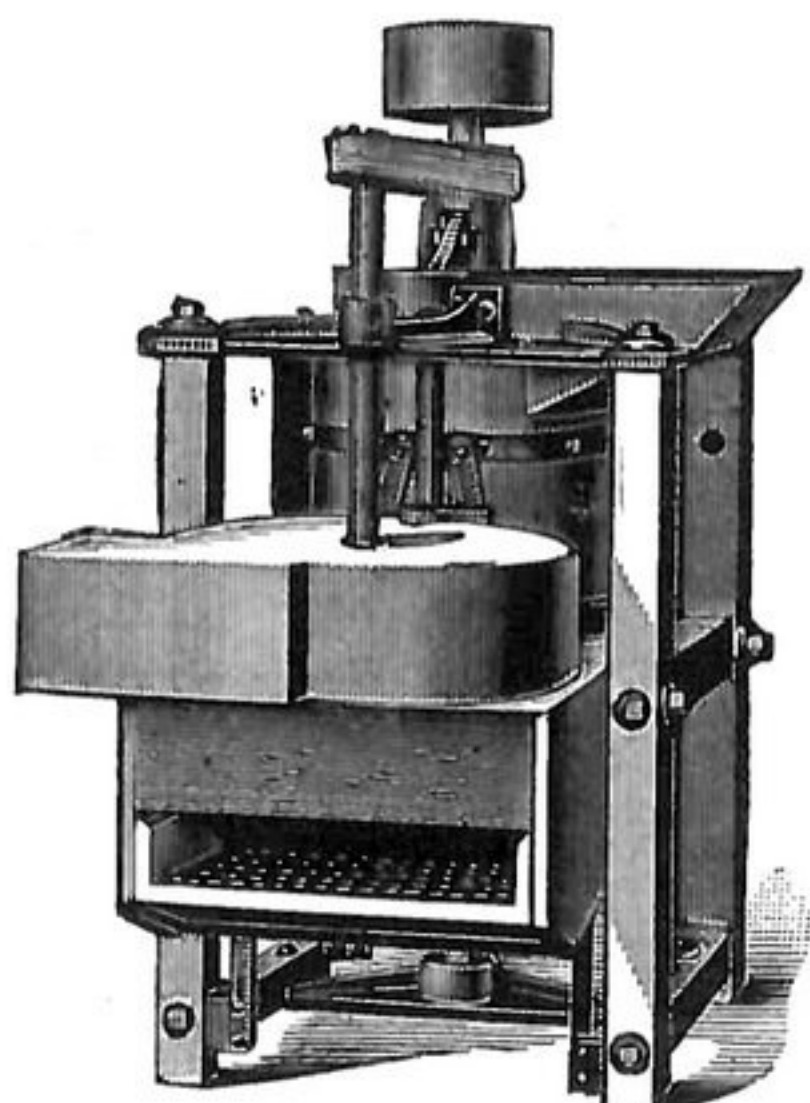
ERIE - - PENN.

THE HIGHEST CAPACITY for the LEAST MONEY.

The Best Machines for Mills and Elevators.

Machines Sent on Thirty Days' Trial.

SHELL UNHUSKED CORN AND CLEAN IT PERFECTLY.



WRITE FOR ILLUSTRATED CIRCULAR WITH PRICES.
NAME THIS PAPER.

INSURE IN THE TRADERS & TRAVELERS

Accident Company,
287 BROADWAY, NEW YORK.

BENEFITS.

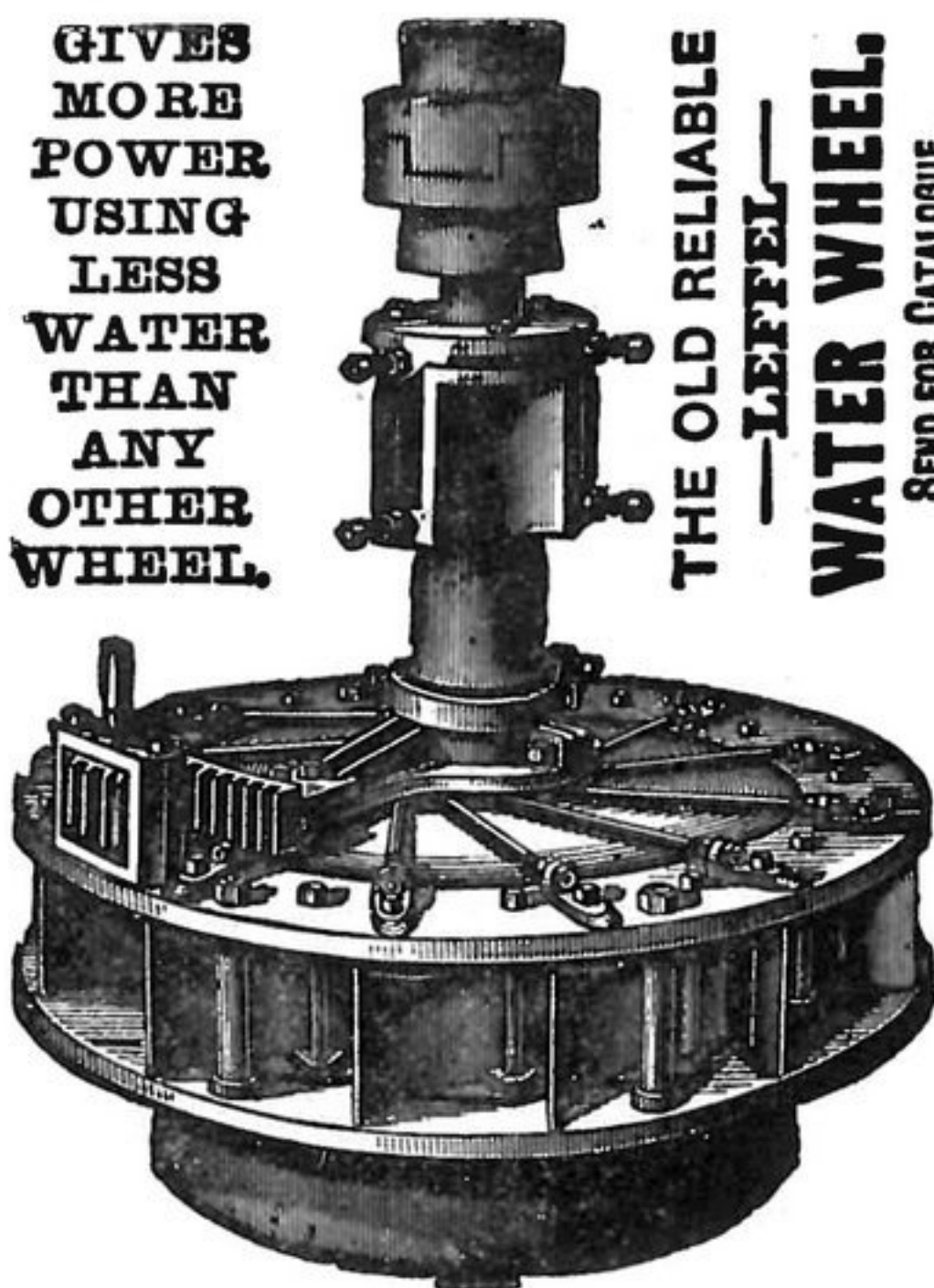
\$5,000 for Death.
\$5,000 Loss of Limbs.
\$2,500 Loss of Limb.
\$2,500 Loss of Sight.
\$1,250 Total Disability.
\$650 Loss of One Eye.
\$25 Weekly Indemnity for
26 Weeks.
One Set of Individual Registry Plates
Included.

COST.

Four Quarterly Payments, \$10.00
Annual Dues, - - - 1.00
Membership Fee, 5.00. \$11.00

IMPORTANT NOTICE.—The Traders & Travelers Accident Co. of New York desire the services of one responsible representative in each town to act as agent for the general transaction of their business. A liberal and permanent arrangement will be made with parties who can fill the above requirements. Address
C. S. SOMERVILLE, Sec'y.

GIVES
MORE
POWER
USING
LESS
WATER
THAN
ANY
OTHER
WHEEL.



THE OLD RELIABLE
—LEFFEL—
WATER WHEEL.
SEND FOR CATALOGUE.
JAMES LEFFEL & CO.
SPRINGFIELD, O., OR 110 LIBERTY ST., N.Y.

PREJUDICE Is a thief and robs you of many good things in this age of phenomenal progress. It pays to investigate. Send for Illustrated Price List of Reliance Safety Water Columns. They protect life and property, save repairs and enforce economy. Every Column Warranted.

Reliance Gauge Co., 831 Sheriff St., Cleve'and, Ohio.

The D&C TO MACKINAC

SUMMER TOURS.

PALACE STEAMERS. LOW RATES.

Four Trips per Week Between
DETROIT, MACKINAC ISLAND
Potoskey, Sault Ste. Marie, and Lake
Huron Way Ports.

Every Week Day Between
DETROIT AND CLEVELAND

Special Sunday Trips during June, July, August and Sept.

Double Daily Line Between
CHICAGO AND ST. JOSEPH, MICH.

OUR ILLUSTRATED PAMPHLETS

Rates and Excursion Tickets will be furnished by your Ticket Agent, or address
E. B. WHITCOMB, G. P. A., DETROIT, MICH.,
Detroit and Cleveland Steam Nav. Co.

THE BEST AND CHEAPEST CORN AND COB CRUSHER

IN THE WORLD.

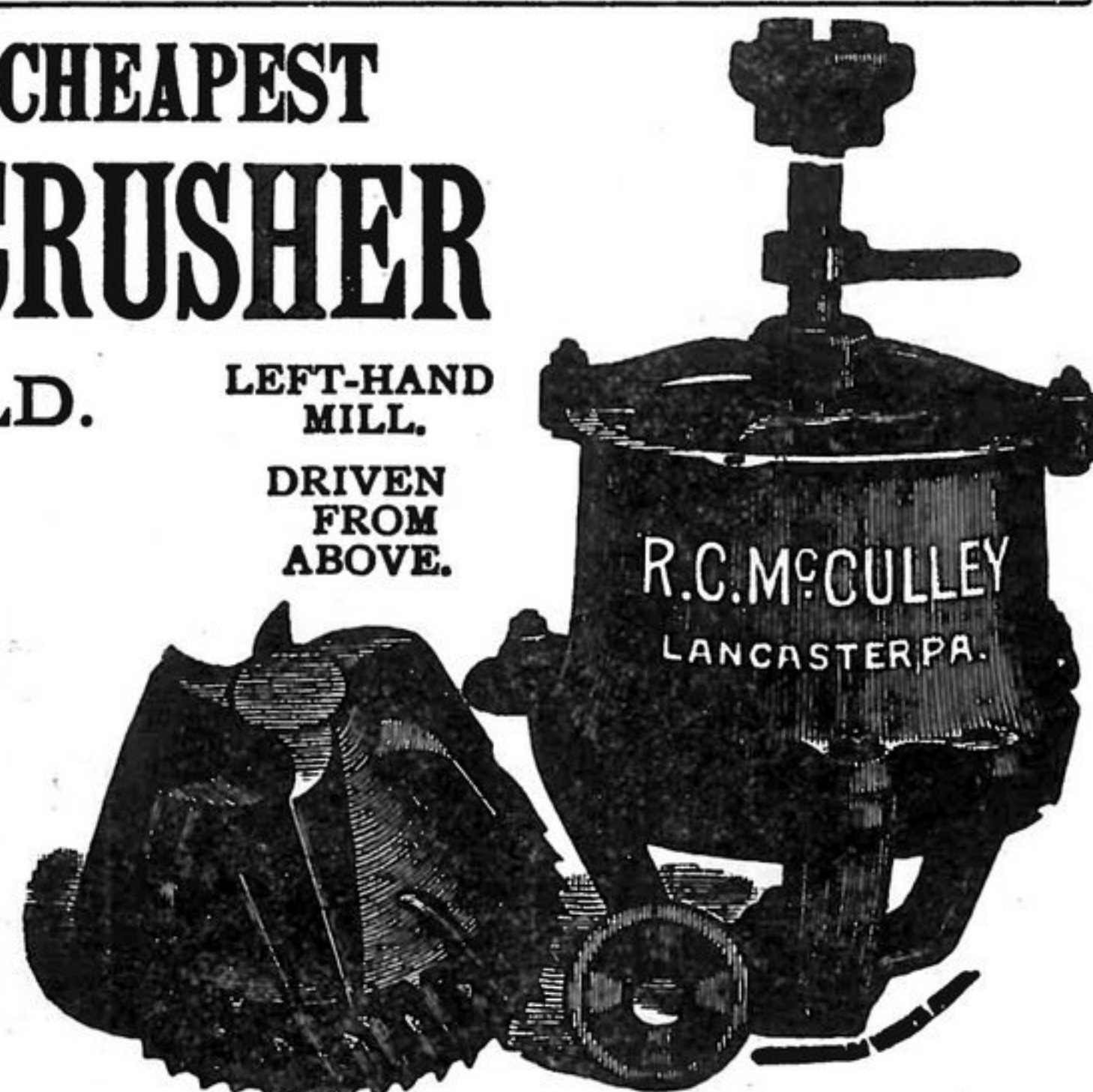
All wearing parts cast of a steel mixture. Notice difference in construction. Most area where most work is done, where all other crushers have least area where most work is done. Low priced machinery is not the cheapest, considering durability and efficiency. Sent on 30 days' trial when satisfactory reference is furnished.

Please Send for Circulars.

R. C. McCULLEY, LANCASTER, PENN.

LEFT-HAND
MILL.

DRIVEN
FROM
ABOVE.



RIGHT-HAND RUNNER.

THE "HARLOW" Positive Feed Lubricators.

For Marine and Stationary Engines,
Steam Pumps, Electrical and
other Machinery.

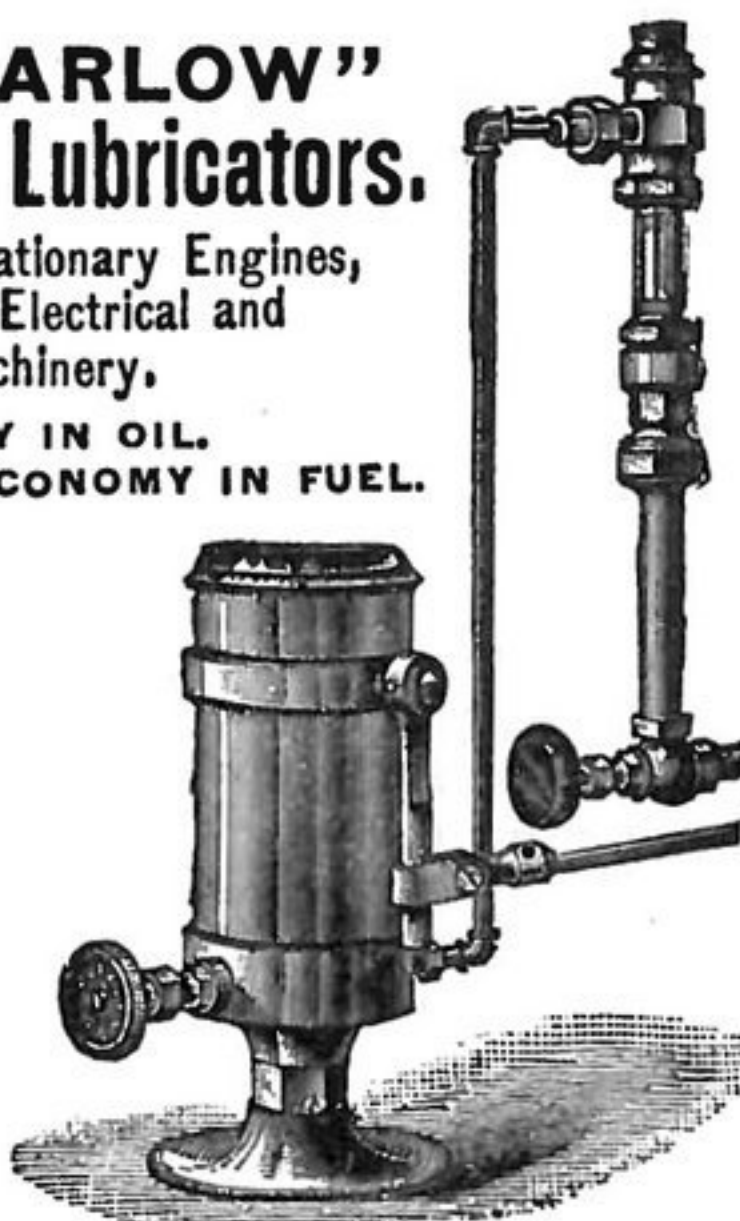
MAXIMUM ECONOMY IN OIL.
MARKED ECONOMY IN FUEL.

Not dependent upon or
operated by Steam
Pressure, Condensa-
tion or Gravity.
Not affected by chan-
ges of temperature.

BEING operated by
some moving por-
tion of the engine or
machine to be lubri-
cated, the "Harlow
Lubricator" starts
and stops with the
engine or machine
being lubricated, without requiring the slightest atten-
tion from the engineer or operator, always delivering the
oil in any amount from a drop to a constant stream.

The cup can be filled at any moment while the engine
or machine being lubricated is in operation, without
causing any leakage either of oil or steam.

Harlow Lubricator Mfg. Co. BOSTON, Mass.
U. S. A.



*"DE MAN WOT KNOWS IT ALL
is allus a-makin' change, a-
buyin' ob experience."*

The man who does not think that
he "Knows it All" about

Pumps, Steam Engines and Boilers

Can find out a great deal about
them in

GRIMSHAW'S PUMP CATECHISM - \$1.00
STEAM ENGINE CATECHISM - - - 2.00
BOILER CATECHISM - - - - - 2.00
PREPARING FOR INDICATION - - 1.00

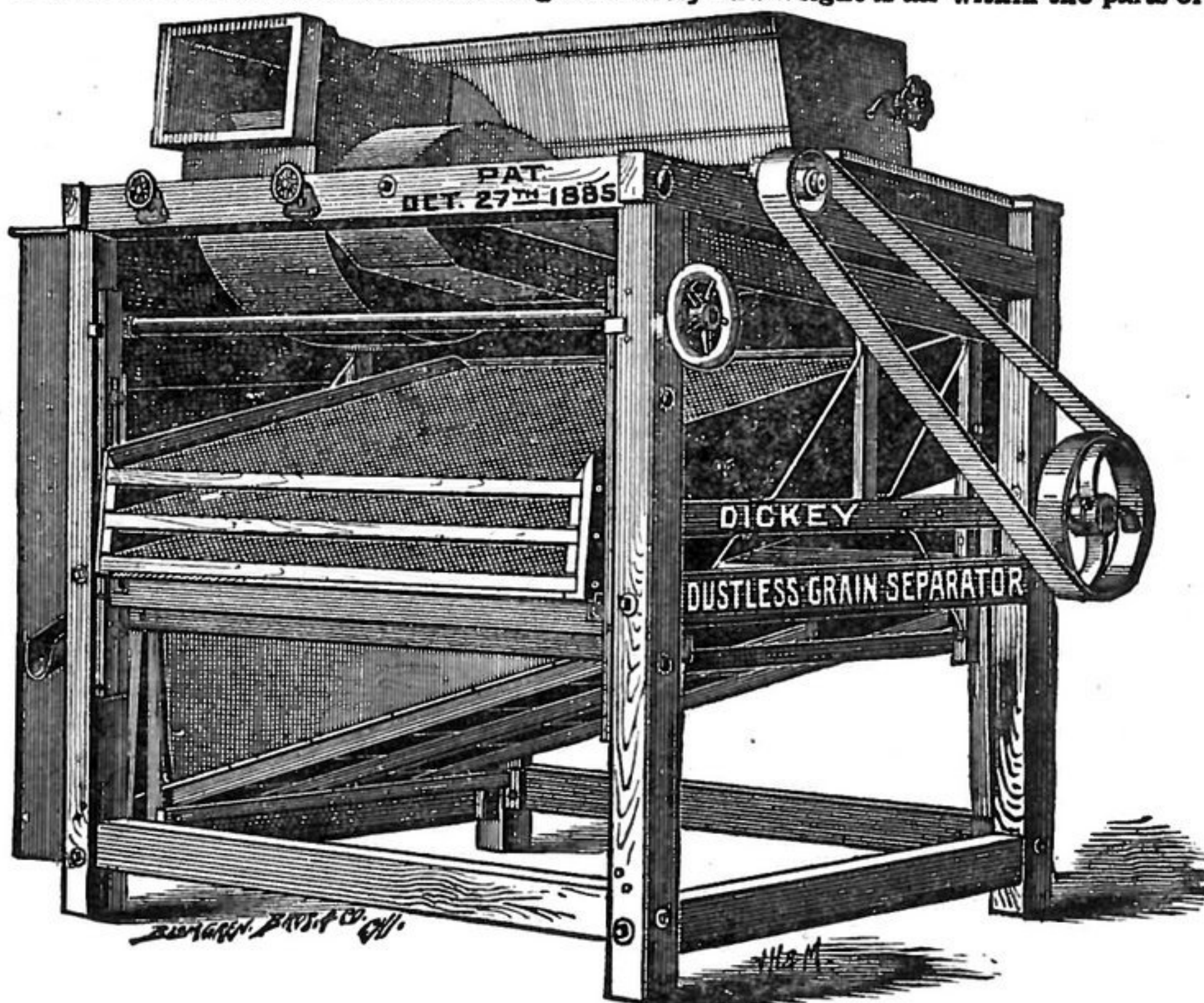
BY MAIL POSTPAID.

McFaul & Nolan, - Buffalo, N. Y.

DICKEY DUSTLESS GRAIN AND FLAX SEPARATOR

This Separator is our latest and most perfect, and guaranteed to be the superior of any now on the market. This machine, as can be seen by the cut, is not a warehouse fanning mill with one patent attachment, but is a Dustless Separator, made for the express purpose of thoroughly cleaning and separating all kinds of grain in large quantities; its construction is such that the working machinery and weight is all within the parts or anchors.

WE CLAIM FOR IT SUPERIORITY.

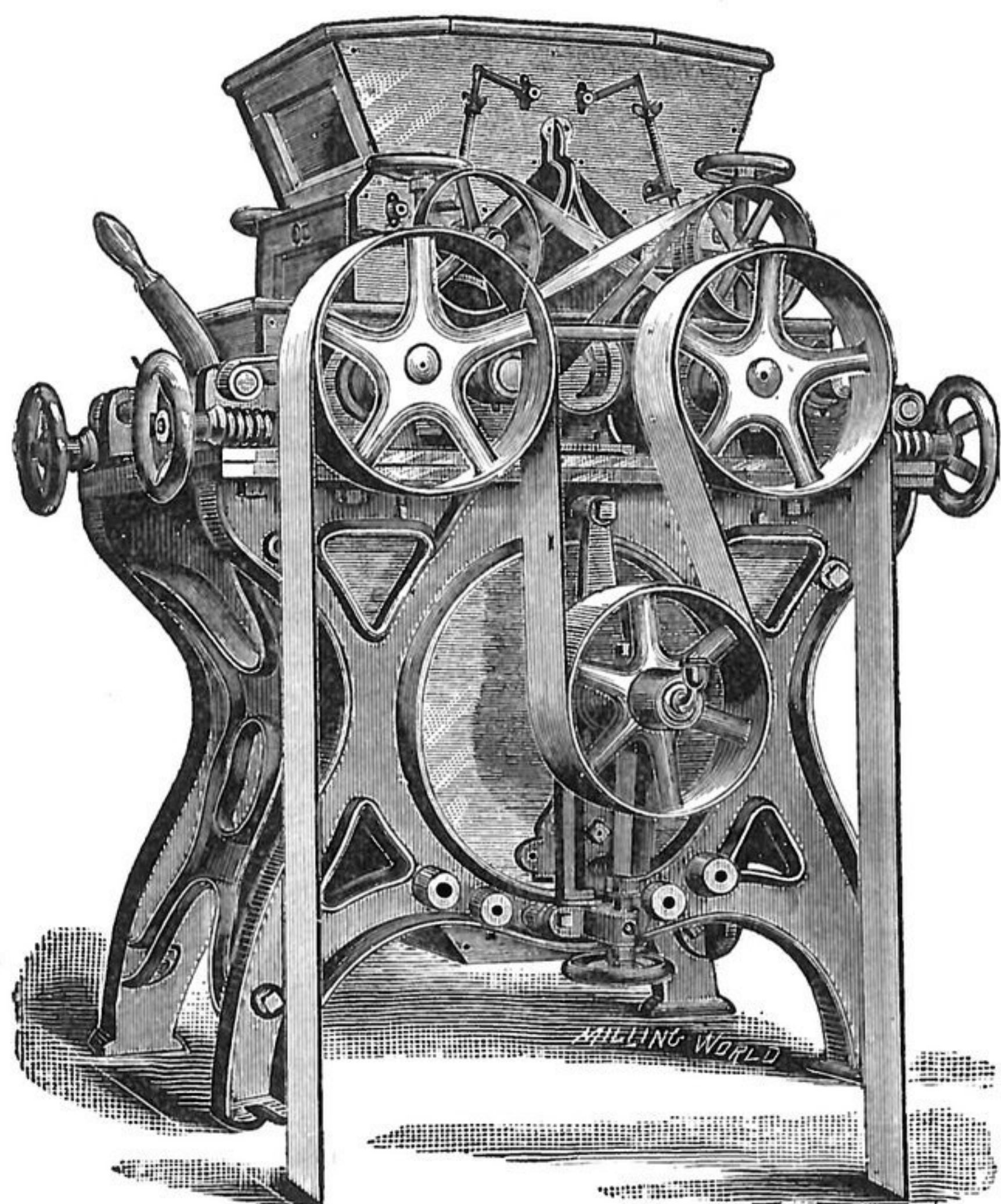


WE CLAIM FOR IT SUPERIORITY.

We claim for it Superiority over everything of the kind made, in simpleness, durability, saving of power, capacity and cost of construction. Its height will accommodate any number of spouts from different points, without moving machine. They have a capacity from 700 to 1,500 bushels per hour. We also control exclusively the manufacture of the celebrated Dickey Giant, End and Side Shake, Warehouse Mills, that have attained such a world-wide reputation. Sent on approval to any reliable party. For full particulars address,

A. P. DICKEY MANUFACTURING CO. Successors to Dickey & Pease, **RACINE, WIS.**

JOHN HUTCHISON MFG. CO., Mill Builders and Mill Furnishers.



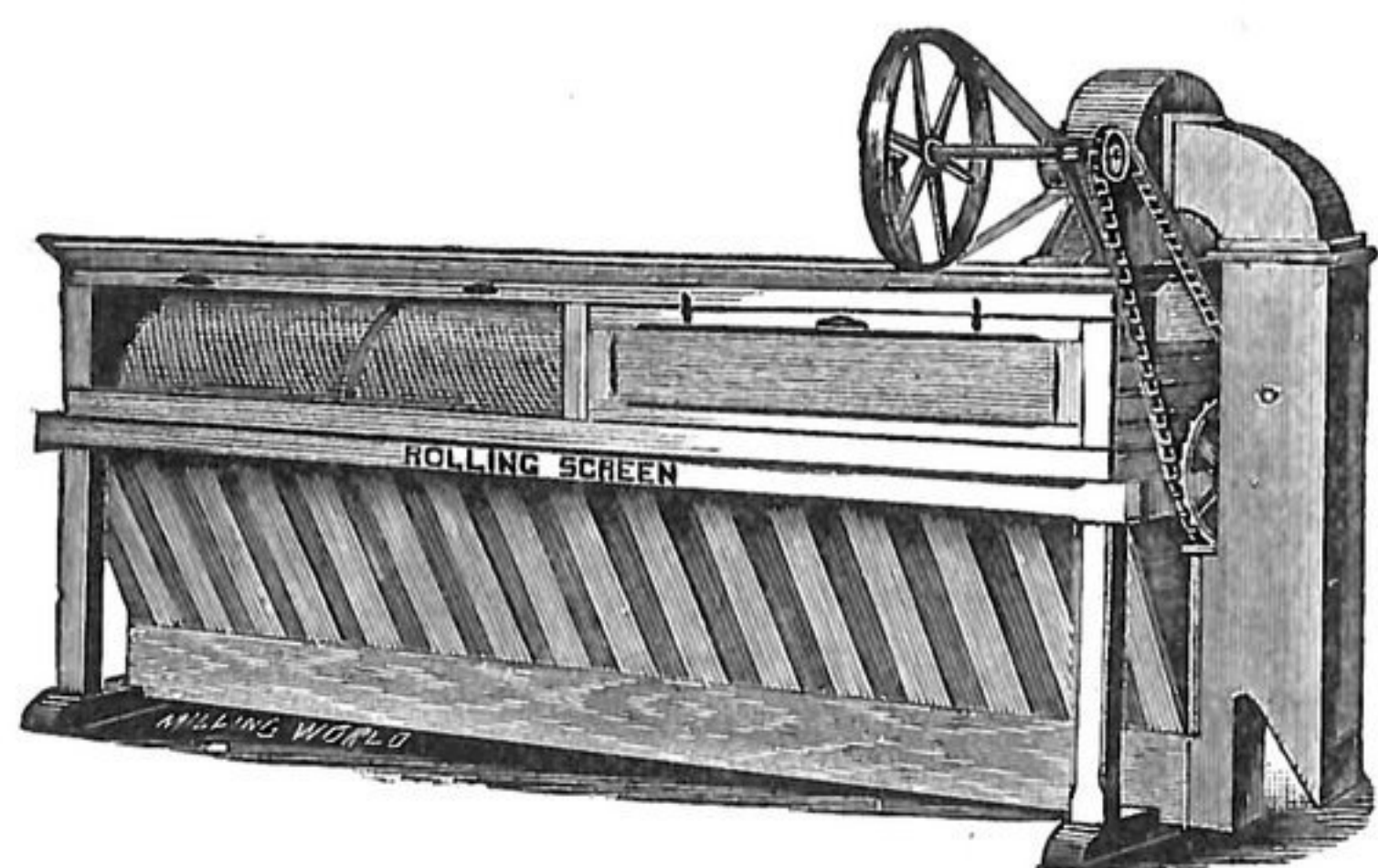
"The Rickerson." The original six inch 4 Roller Mill. We now own the patents on this mill and after greatly improving the mill manufacture them in four sizes:

6x12 inch.

6x18 inch.

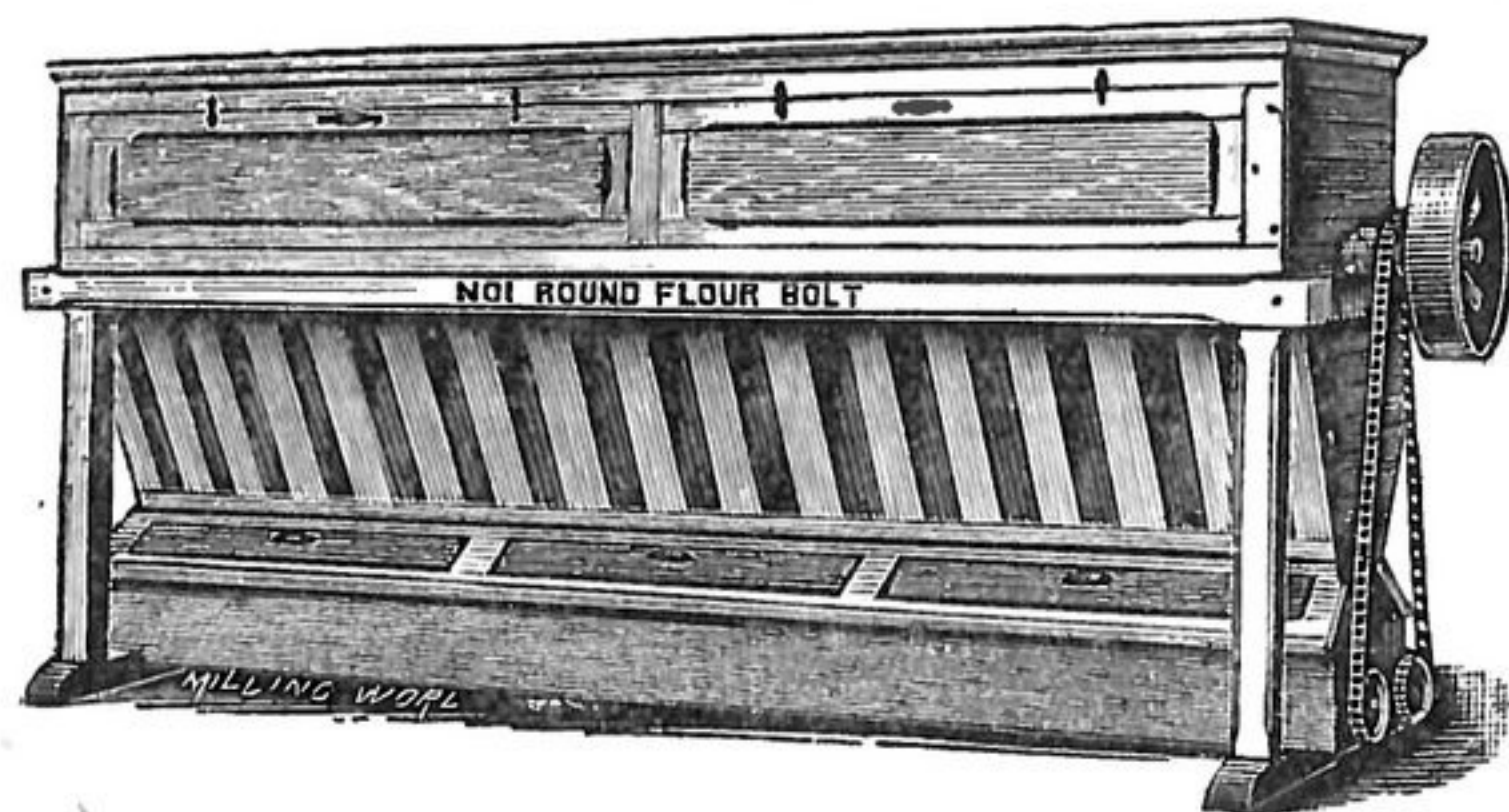
6x15 "

6x20 "

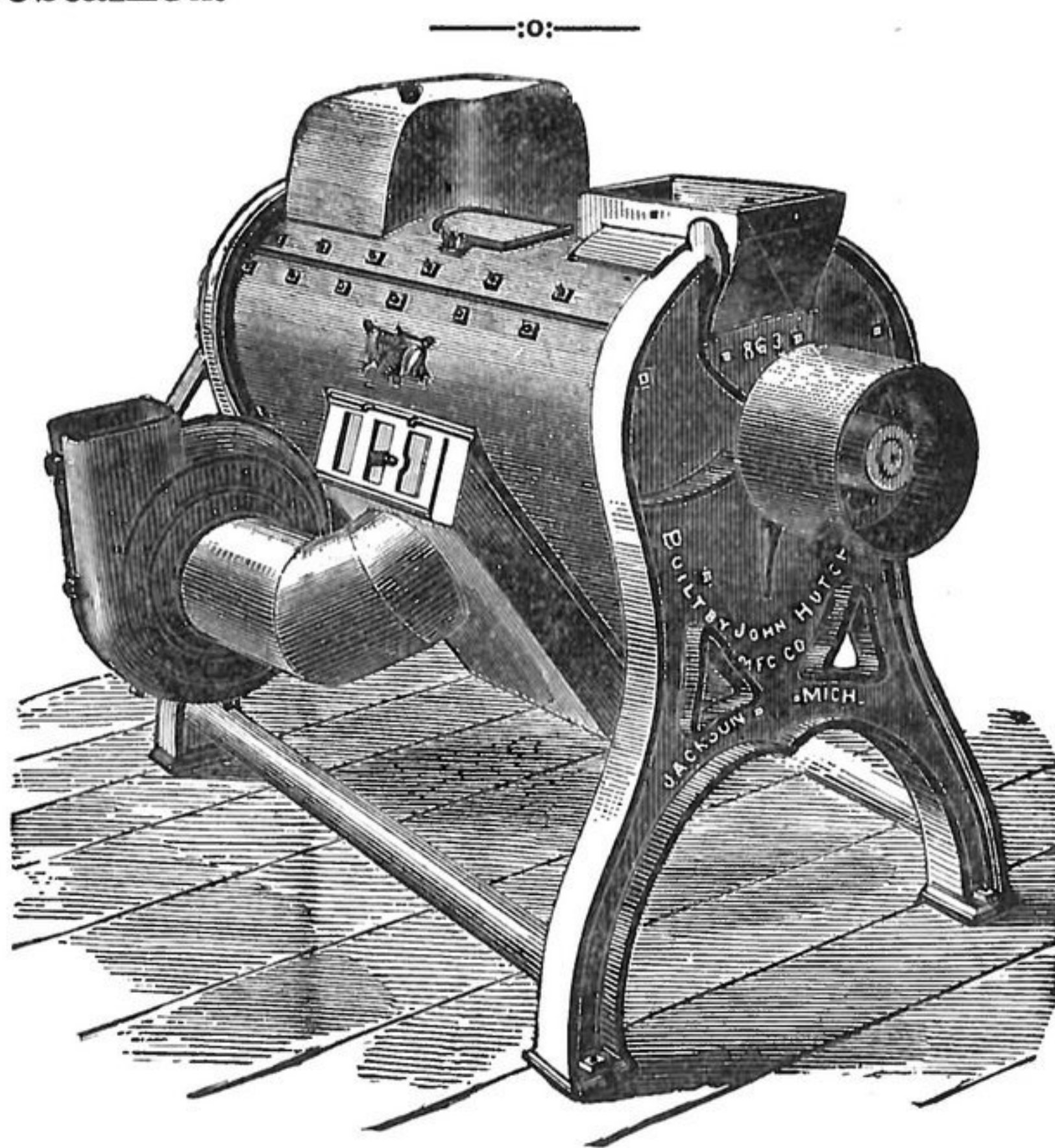


The above cut represents our New Rolling Screen, which is absolutely dustless and has as much scouring qualities as any two scouring machines now being made.

Send for Estimates for Our Full Roller Mills of any Capacity.



The above cut shows our New Round Slow Running Flour Bolt. We also build a Cylinder or Round Scalping Reel and we have lately built a number of new mills of medium capacity, using our Roller Mills, our Round Flour Bolts and Scalping Reels, getting better results than is usually obtained.



Hutchison's New Dustless Iron Corn Sheller, especially adapted for Mill and Elevator use.

—:ADDRESS ALL CORRESPONDENCE TO:—

John Hutchison Mfg. Co.

JACKSON. - - MICHIGAN.



ELEVATOR BUCKET.

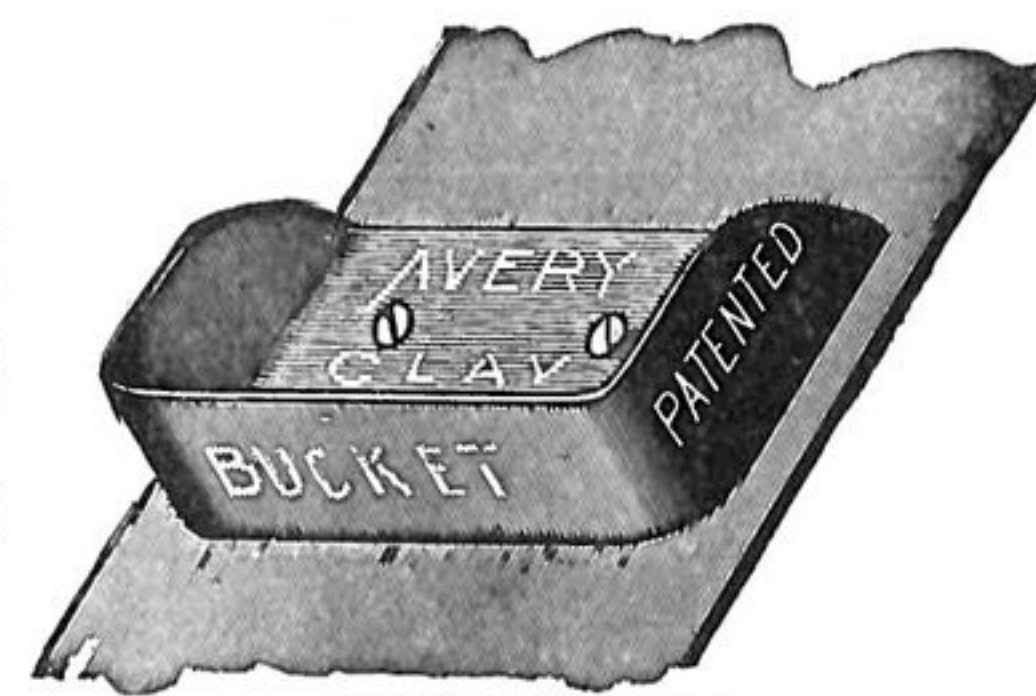
PLEASE NOTICE.

Our patents not only cover Seamless, Drawn, Stamped, Pressed or Forged Elevator Buckets; but also Pre-Date and Cover Round-Cornered Elevator Buckets when made Seamless, and are the Only patents ever issued in the World for a Pressed, Stamped, Drawn or Forged Seamless Elevator Bucket.

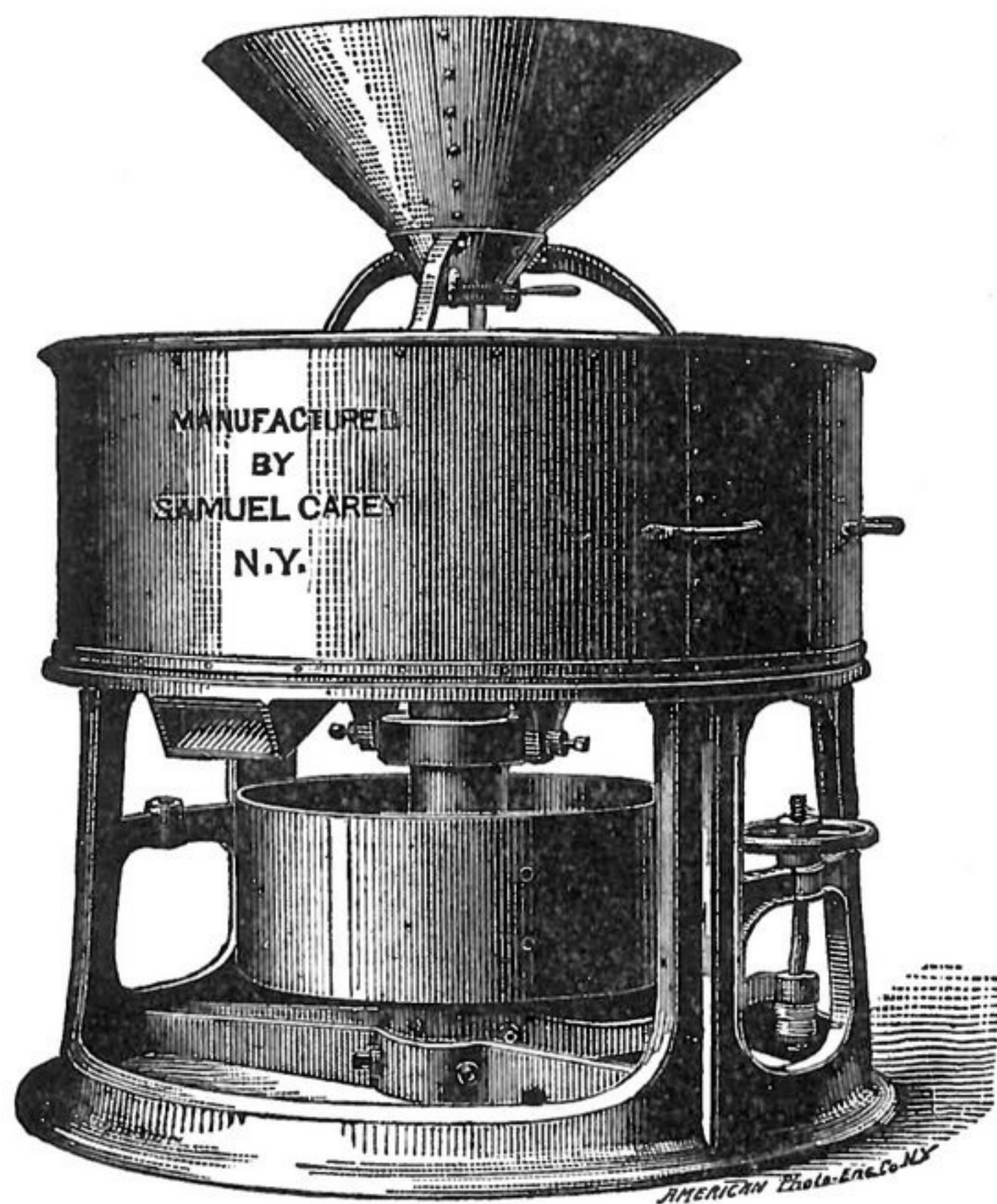
Stamping and Pressing of Sheet Metals for all Classes of Work. Also Tinning, Galvanizing and Japanning.

THE AVERY STAMPING CO.,

Successors to The Avery Elevator Bucket Co.,
Cleveland, Ohio, U. S. A.



CLAY BUCKET.



SELF-TRAMMING PORTABLE MILL

BEST GRINDING MILL MADE.

BOLTING CLOTH

AND

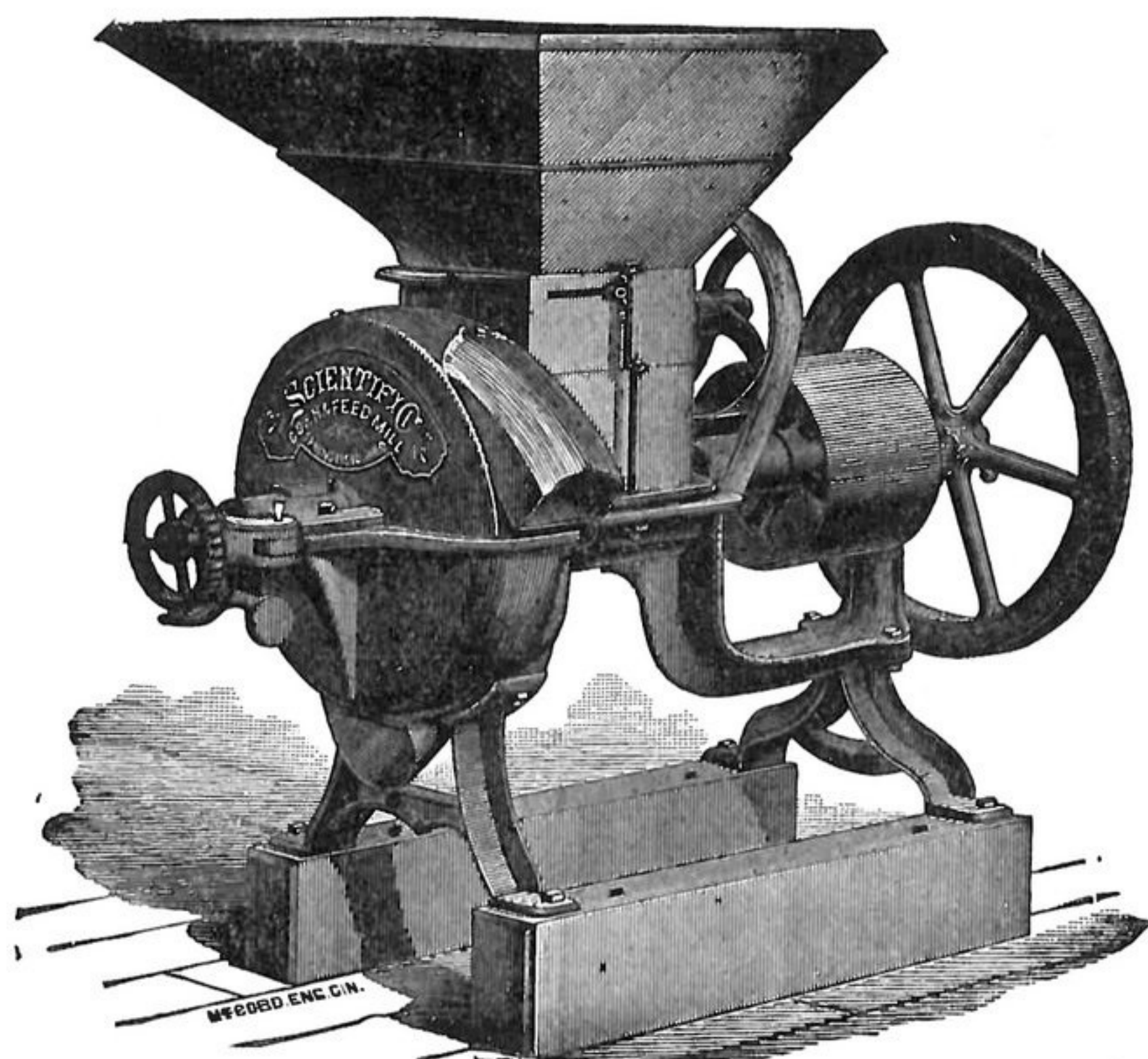
BURR AND ESOPUS MILLSTONES

WRITE FOR DISCOUNTS.

SAMUEL CAREY,

17 Broadway,

NEW YORK.



THE SCIENTIFIC GRINDING MILL.

POSITIVELY THE BEST MILL ON EARTH.

GRINDS PERFECTLY, EAR CORN, SHELLLED CORN,
AND ALL GRAINS.

GRINDING PLATES A SPECIAL METAL

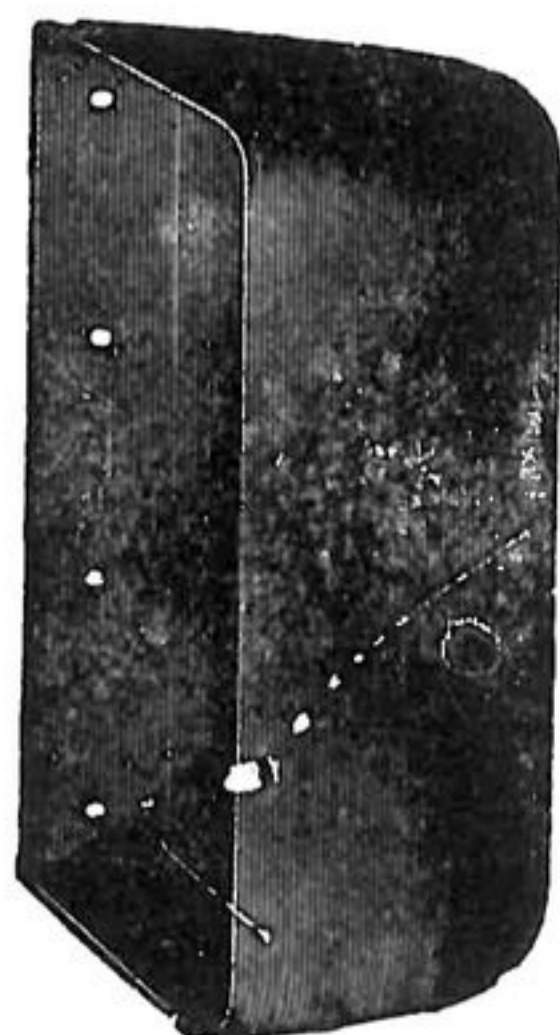
*Hard as Steel, Guaranteed to Grind from Five to Eight
Thousand Bushels before wearing out.*

SEND FOR ILLUSTRATED CATALOGUE, PRICES, ETC.

THE FOOS MFG. CO.

SPRINGFIELD OHIO.

STILL ON TOP.



Perhaps the **HIGHEST COMPLIMENT** that could be paid the "Salem" bucket is the fact that during the past few years ITS SHAPE HAS BEEN SO CLOSELY IMITATED by other manufacturers as to infringe our patented rights, but experience reveals the **IMPERFECTIONS OF IMITATIONS**, and we therefore take it as a **FURTHER COMPLIMENT** to the "SALEM" bucket that some of its old patrons who were *Induced to Try the Imitations have now Returned to the Salem Bucket, thereby Acknowledging it to be the Most Satisfactory.* Don't be deceived by other makes of buckets that are claimed to be "Just as Good." Insist upon having the **ORIGINAL AND RELIABLE SALEM BUCKET.** All legitimate Salem buckets are plainly marked with the word

SALEM

W. J. CLARK & CO., SOLE Manufacturers **SALEM, OHIO.**

THORNBURGH & GLESSNER, General Agents, CHICAGO, ILL.